



PROGRAM D: Enhancing information flow and IMT effectiveness



Enhancing Information Flow and Incident Management Team effectiveness

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Project Intention

To work with stakeholders to improve teamwork effectiveness and subsequent organisational (and cross-organisational) learning.

Research Questions

- What (individual and collective) *work practices* can be identified that enhance effective communication, collaboration and shared understanding between operators involved in ICS/IMT performance?
- What organisational *structures* and *cultures* can be identified within emergency management agencies and how do these enhance and inhibit effective ICS/IMT work performance?
- How might IMT/ICS work performance be enhanced through development of *new practices* (e.g., protocols, training) developed for localised and specific needs?



Different levels of analysis (ICS/IMT)... within the context of interactions within an emergency management framework.

Australian Inter-Service Incident Management System (AIIMS)

- a) Control
- b) Command
- c) Coordination

Incident Management Teams

- a) Incident Controller
- b) Deputy Incident Controller
- c) Operations Officer
- d) Planning Officer
- e) Logistics



Effective Incident Management Organising:

- **Information Management**
- **Managing interdependencies**
- **Consequence Management**

Why Information flow?



Historical changes in infrastructures and systems

- Tighter inter-dependencies. Now, impacts felt are more widespread because infrastructures and systems are more tightly coupled (e.g., national power/water grids).
- Secondary impacts on the community can be longer lasting than event itself.





Consequence Management

- Hurricane Katrina: shelter/displacement for months/years
- 9/11: power, water telecommunications systems either destroyed or severely disrupted
- Flooding in France: 150,000 people without water for two weeks
- London bombings: community post-traumatic stress for months





Significant international multi-agency incidents

- The exchange of timely and accurate information and the capacity of disparate agencies to find, absorb and adapt to that information is fundamental to the ability of those same agencies to integrate their activities (Comfort & Kapucu 2006).
- Breakdowns of information flow typically occur at the boundaries of differing agencies or groups.





Research Methods

- Interviews experienced personnel (N=115)
- Observations planned (n=12) and unplanned incidents (n=4)
 - 25.4 hours of sampled video data
 - 10,449 video-coded clips
 - 19 hours audio transcriptions
 - 265 collective efficacy/teamwork effectiveness surveys
- **National Survey AIMS (n=579 responses)**



Planned incidents

- Training simulations

Unplanned incidents

- Fires in Victoria and Tasmania



National AIMS Survey Objectives

- improved strategies to enhance the effectiveness of AIMS work practices
- improved flows of information between personnel involved in incident response and its management
- improved training initiatives to enhance the effectiveness of AIMS



Australasian Inter-service Incident Management System National Questionnaire

Six sections

Section 1: Overview of incident

Section 2: Area of Responsibility during incident

Section 3: Teamwork perspectives

Section 4: IMT & Incident Ground/Fire Ground Interaction

Section 5: Processes and Procedures

Section 6: Individual Profile



A caveat:

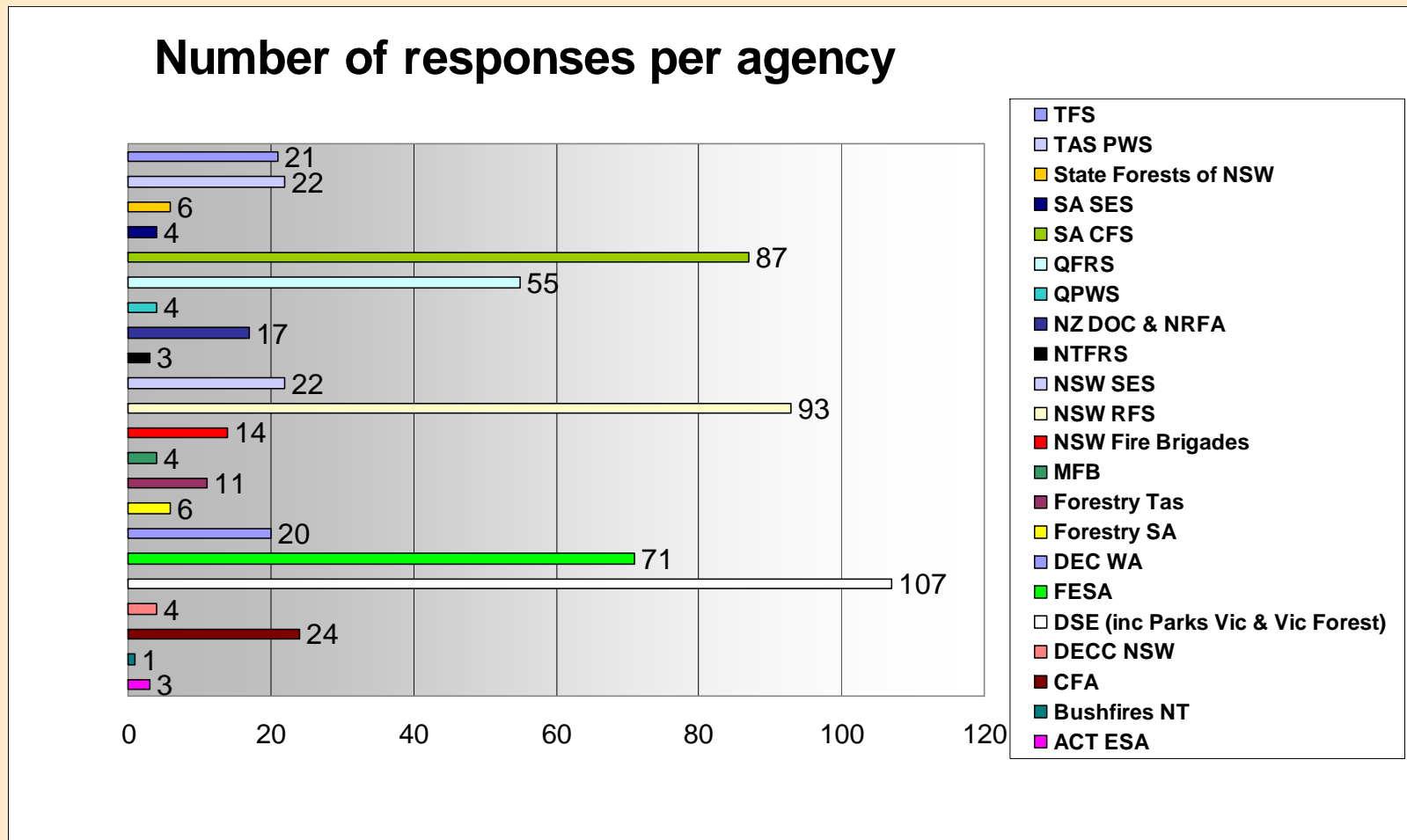
"Lies, damn lies..... And statistics!!!"

(Statistical) significance \neq importance

and

Importance \neq (Statistical) significance

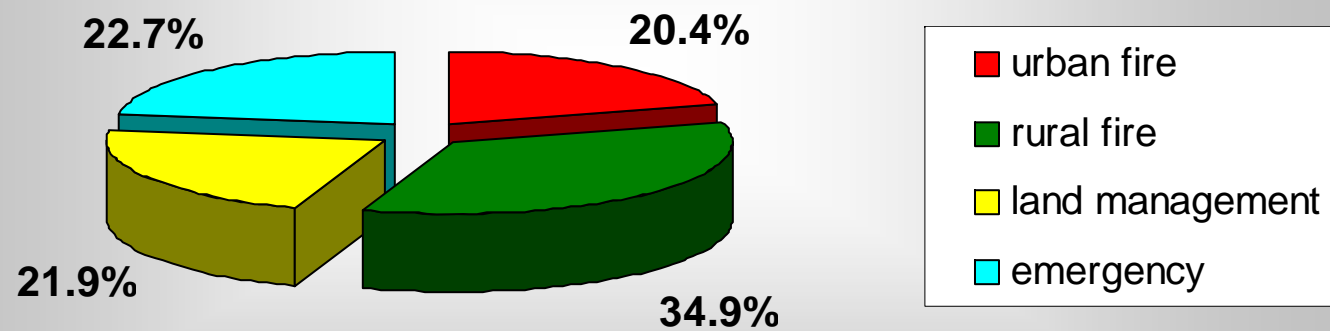
→ Responses (n=579)





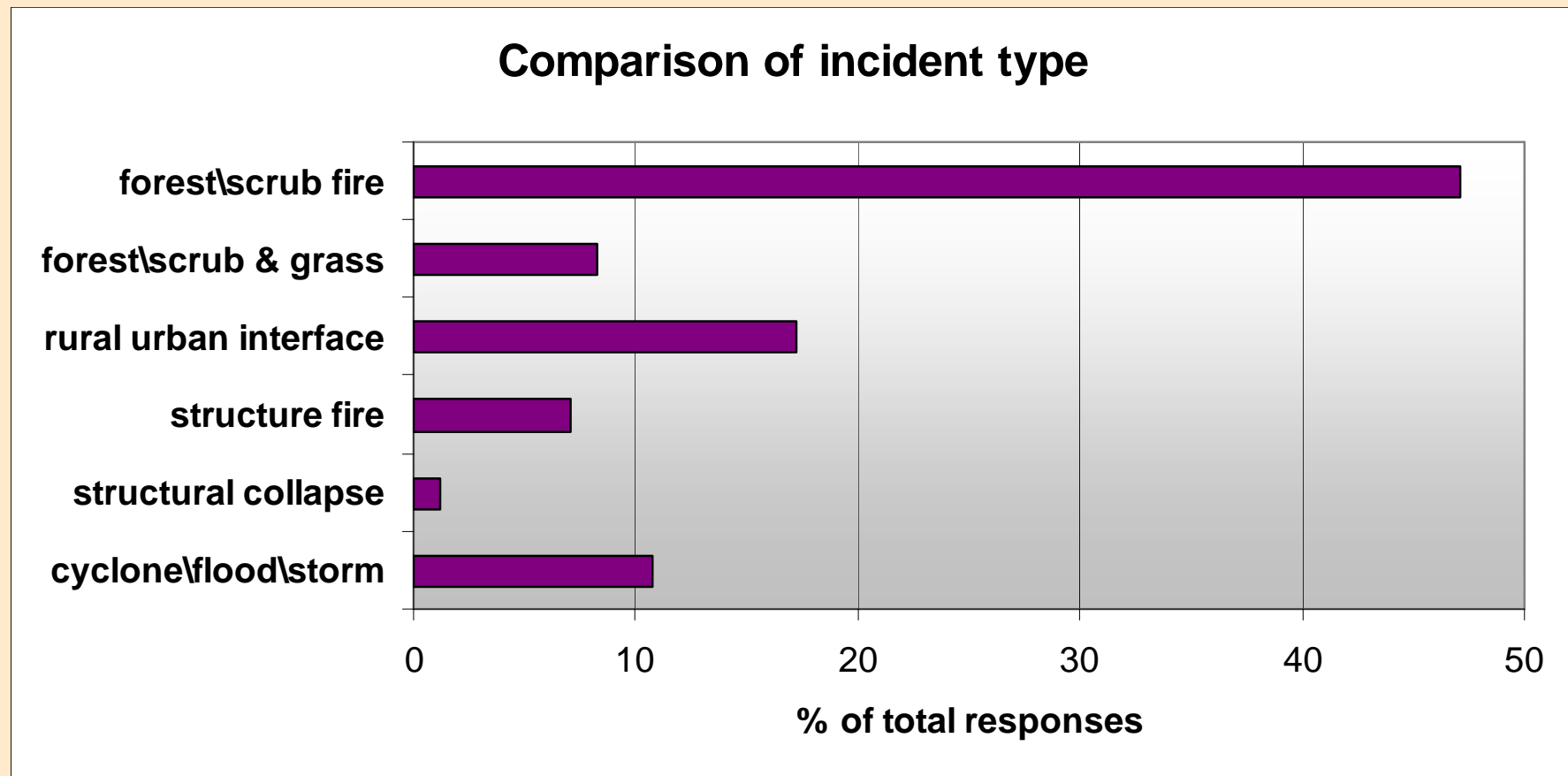
Functions: All agencies

Functions of agencies responding to AIMS National Questionnaire 2008

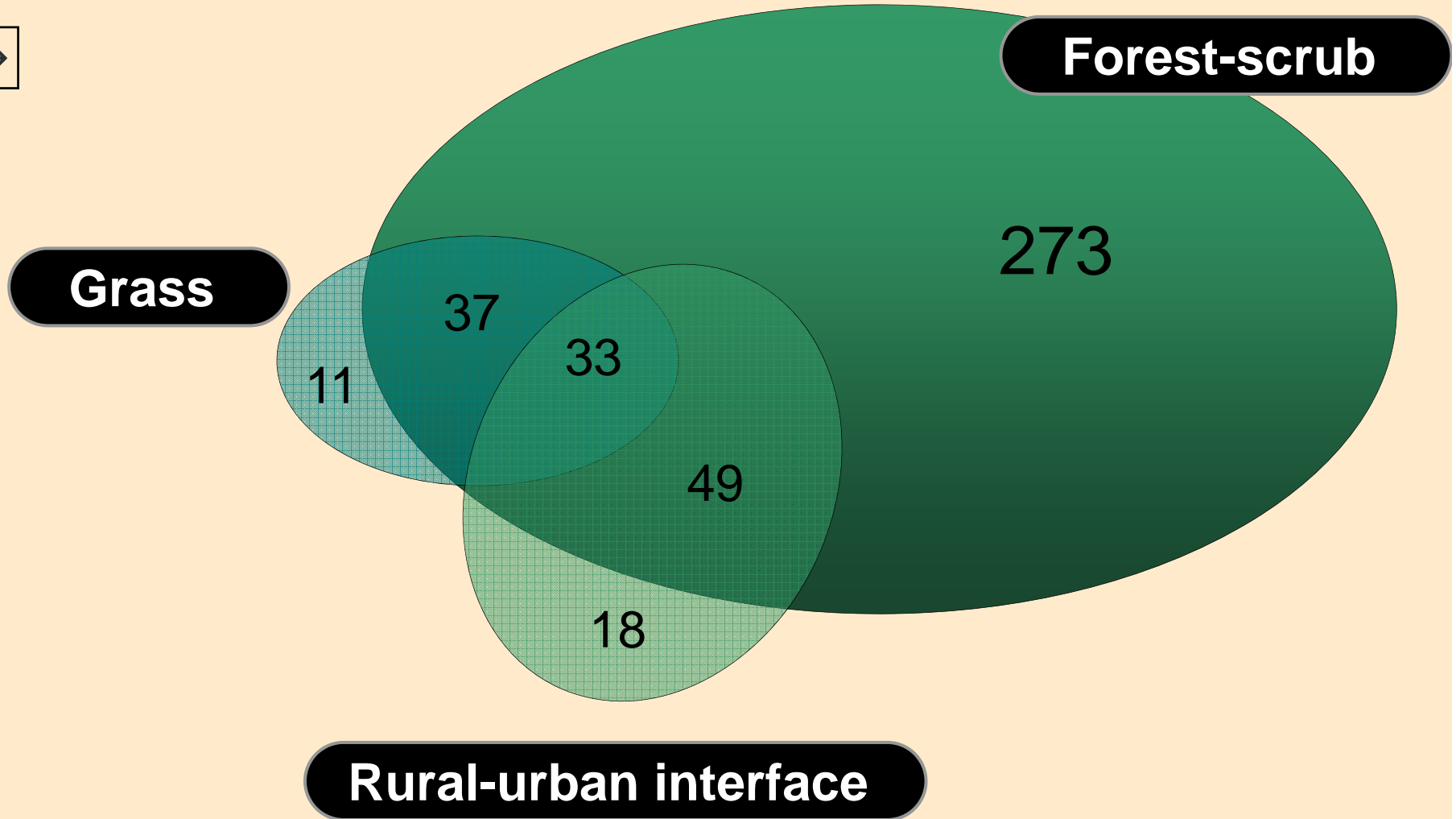




Incidents

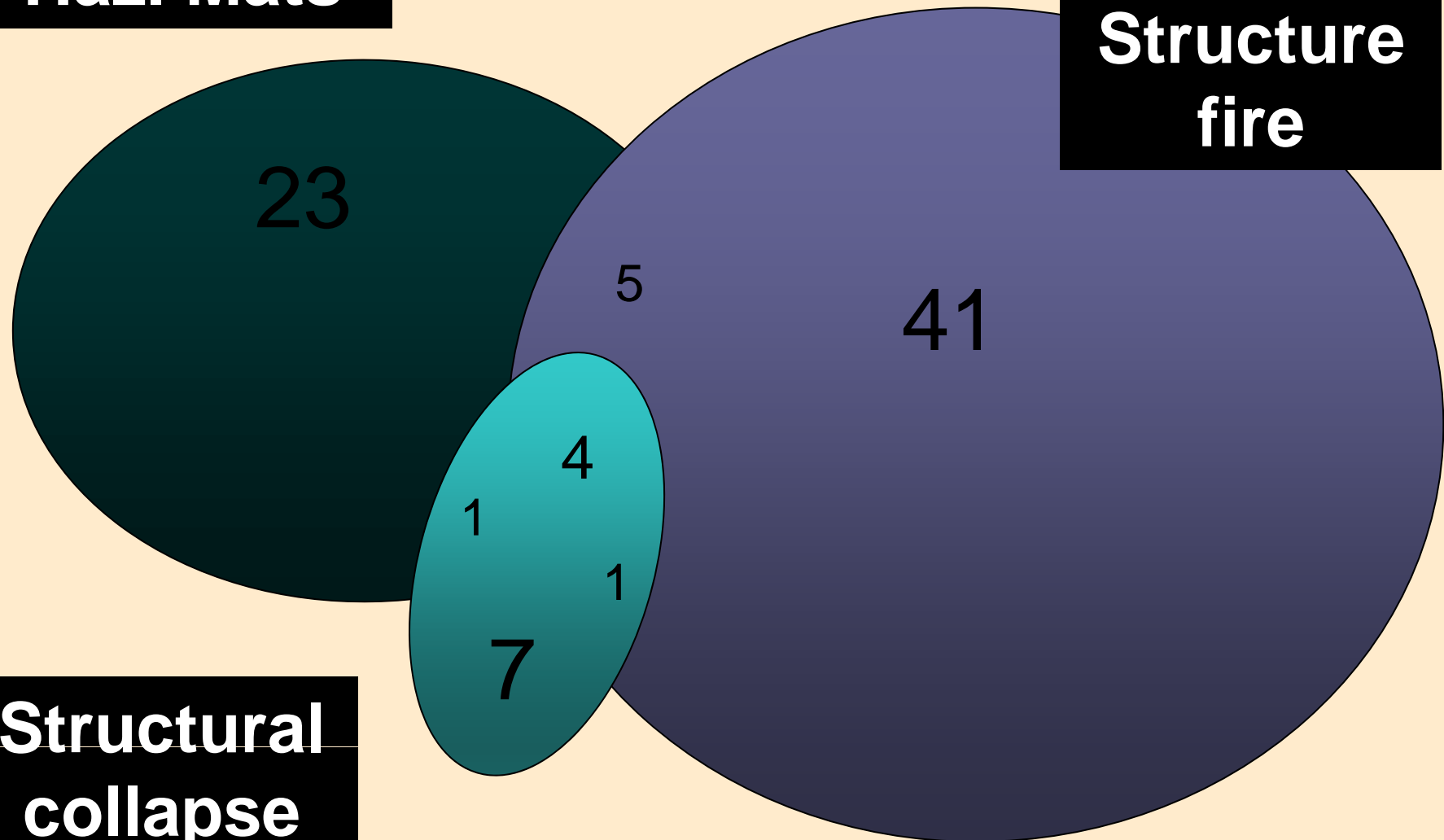


Incident Types



Haz. Mats

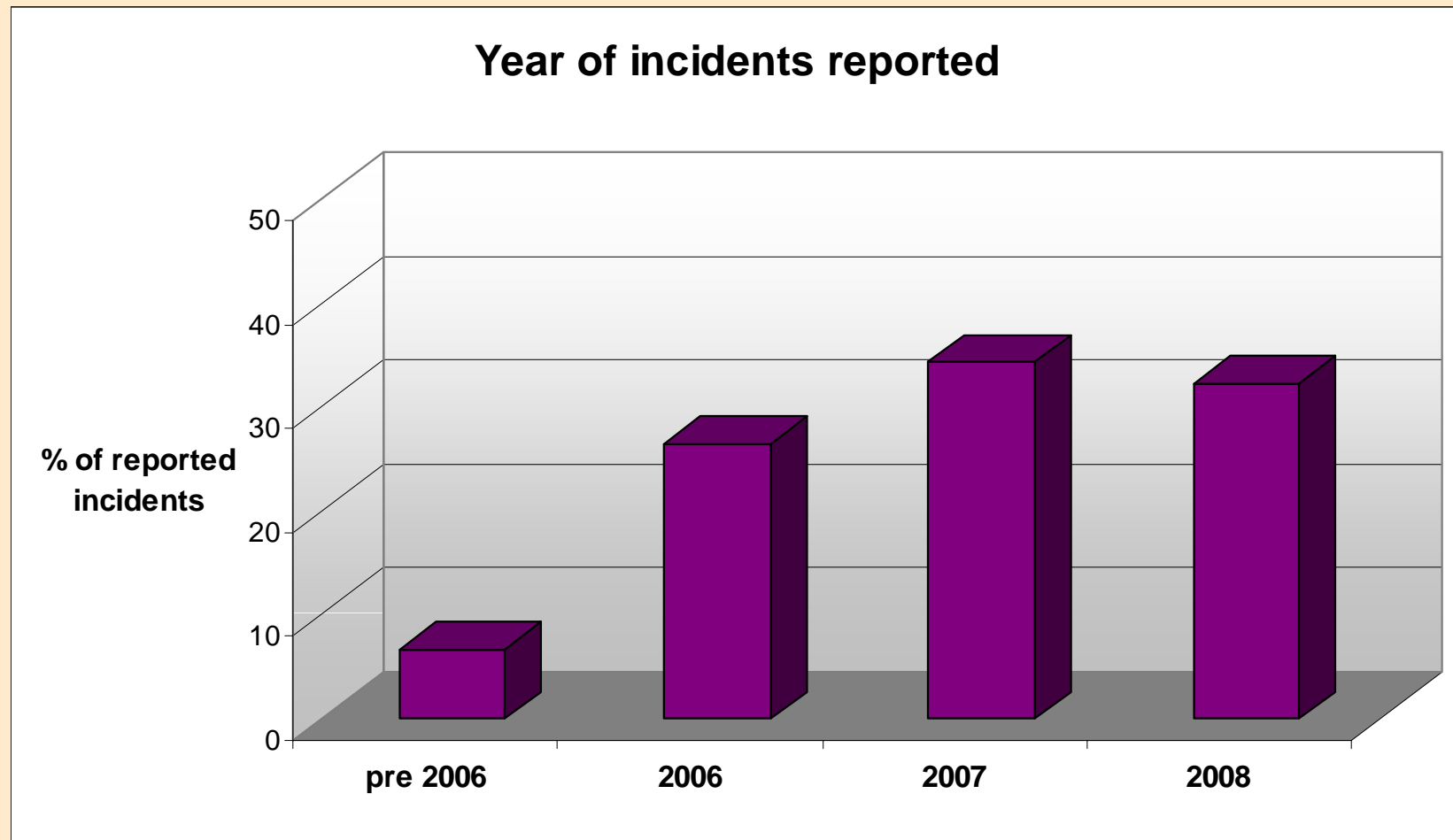
**Structure
fire**



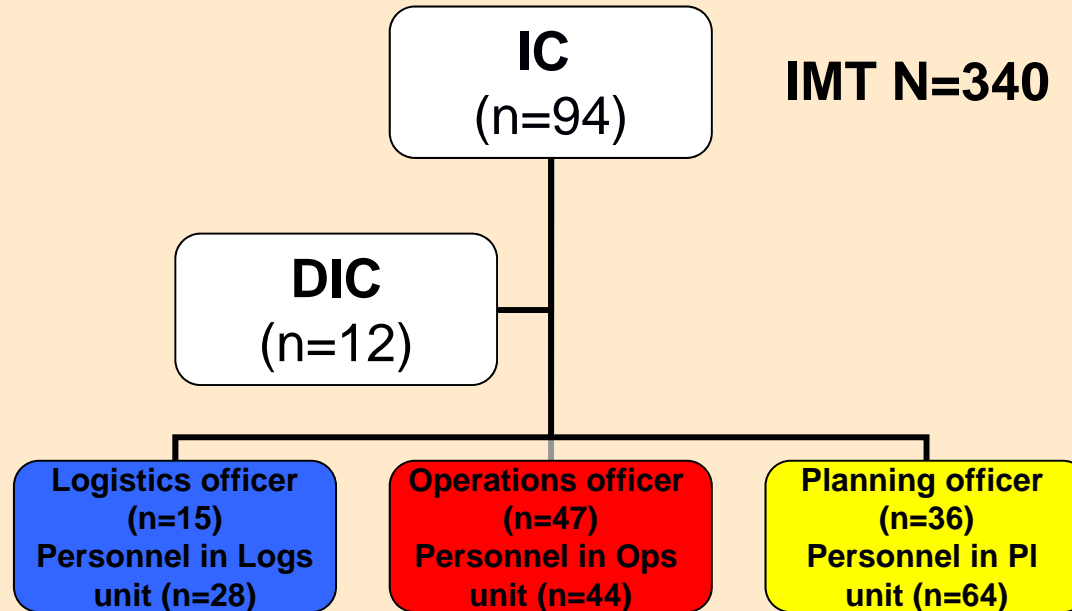
**Structural
collapse**



Year of incidents reported



Functional areas of respondents

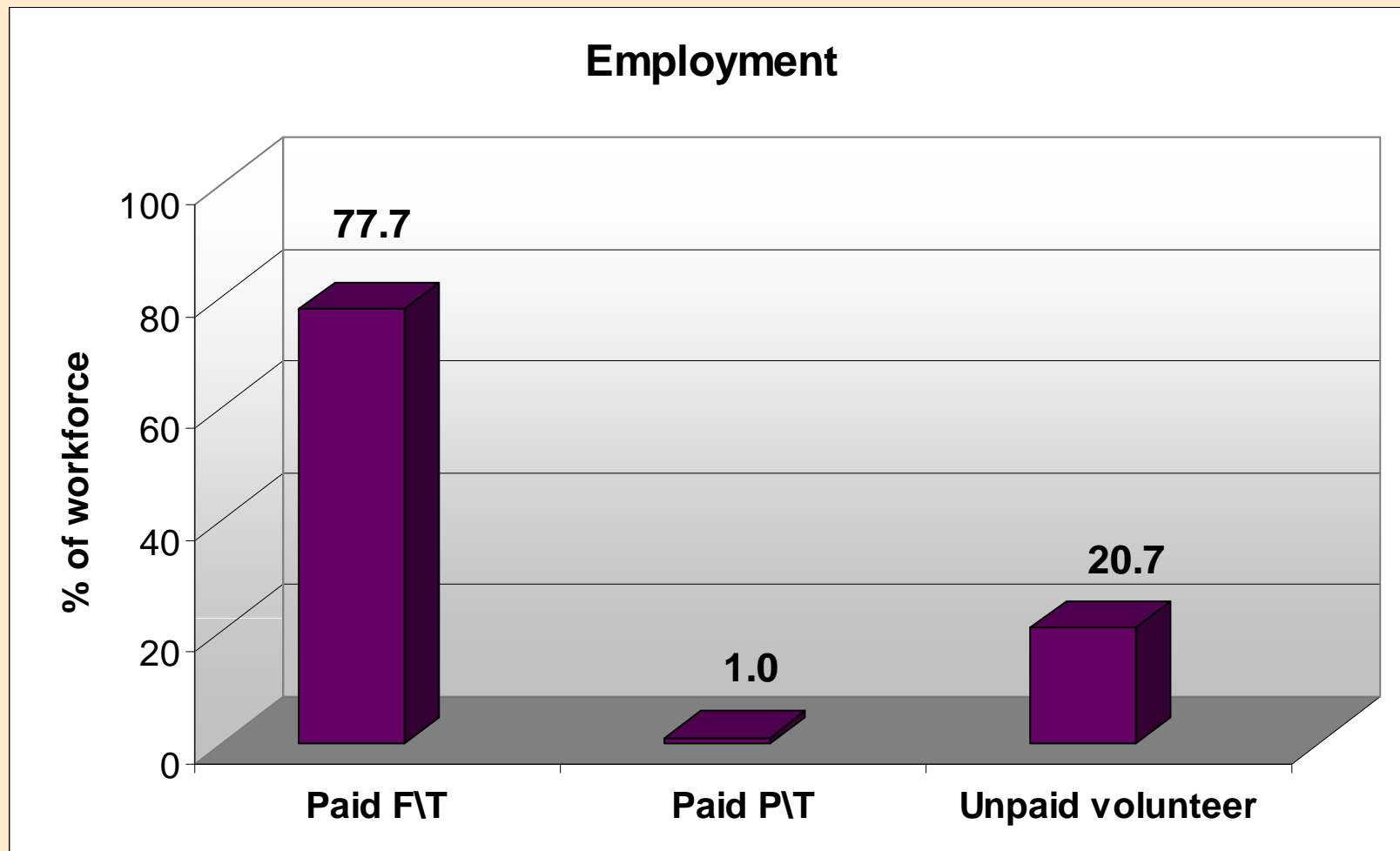


Fire/incident ground N = 104	
Division commander	26
Section commander	28
Crew leader/OIC	21
Fire fighter	14
F/I ground other	15

Coordination N = 57	
Regional	12
State	10
Coordination other	35



Employment Distribution





Male and Female response rates

All agencies 2003

	%
Male	90
Female	4
Unidentified	6
Total	100

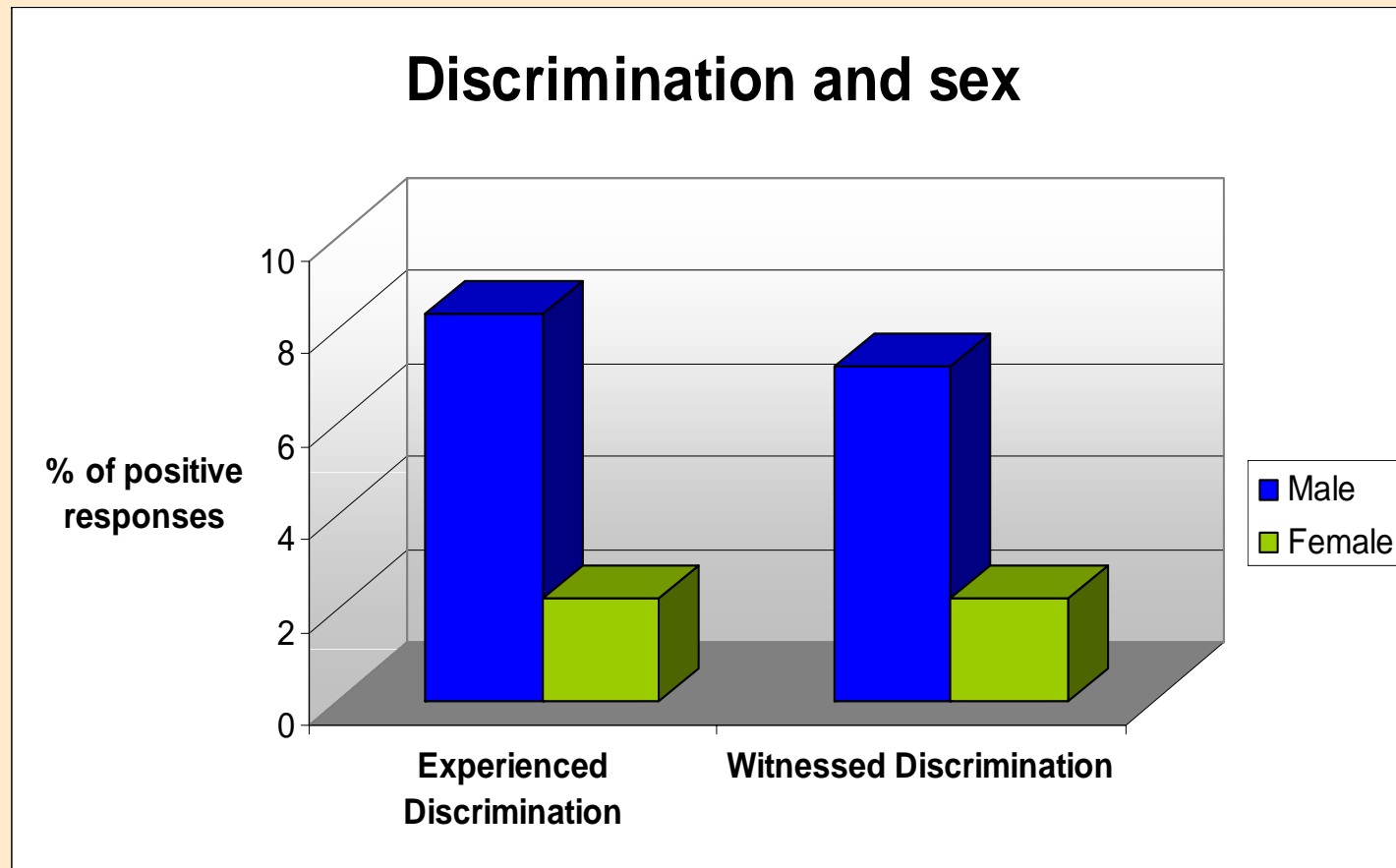
All agencies 2008

	%
Male	74
Female	12
Unidentified	15
Total	100

The question of discrimination.....

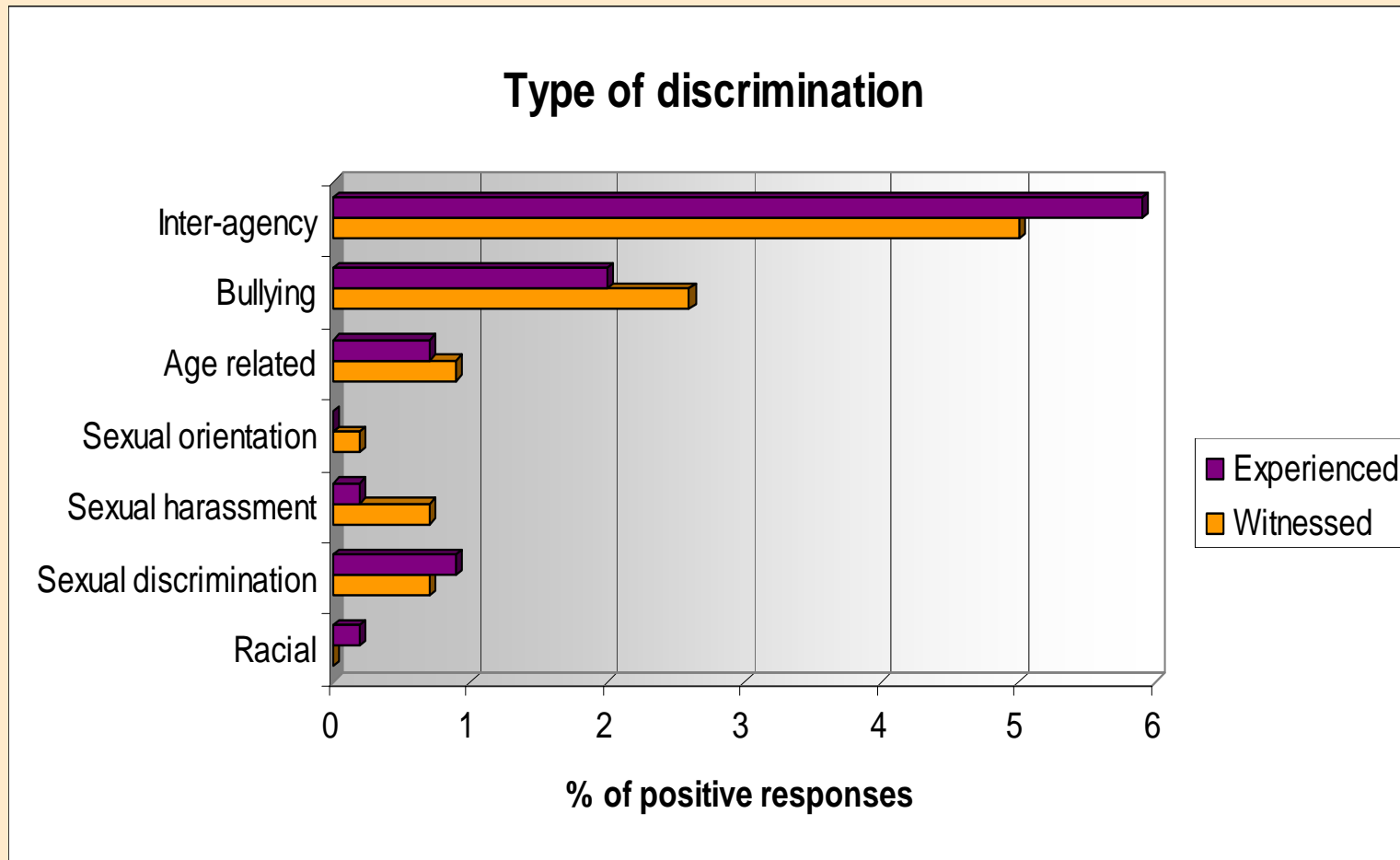


Discrimination



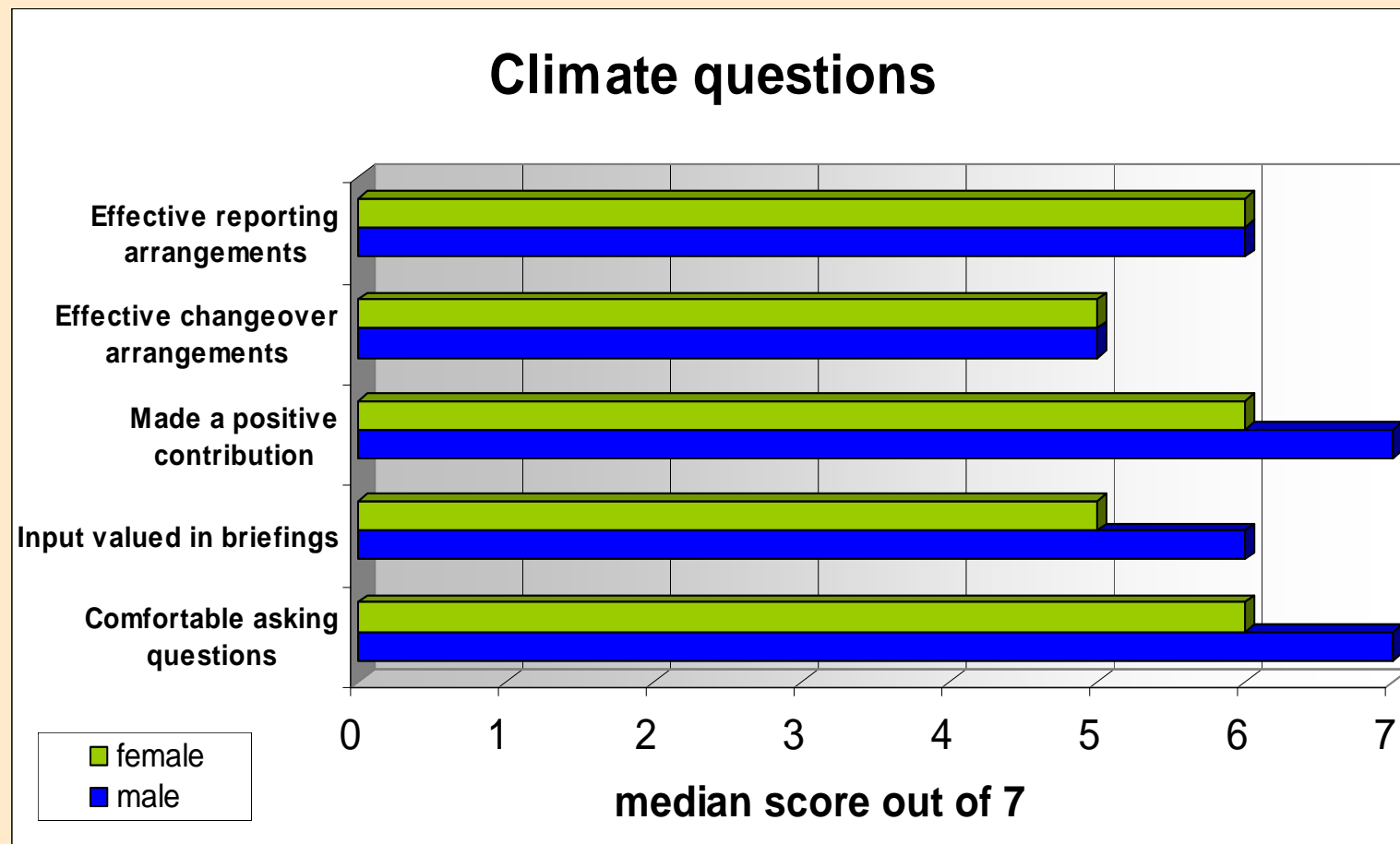


Discrimination



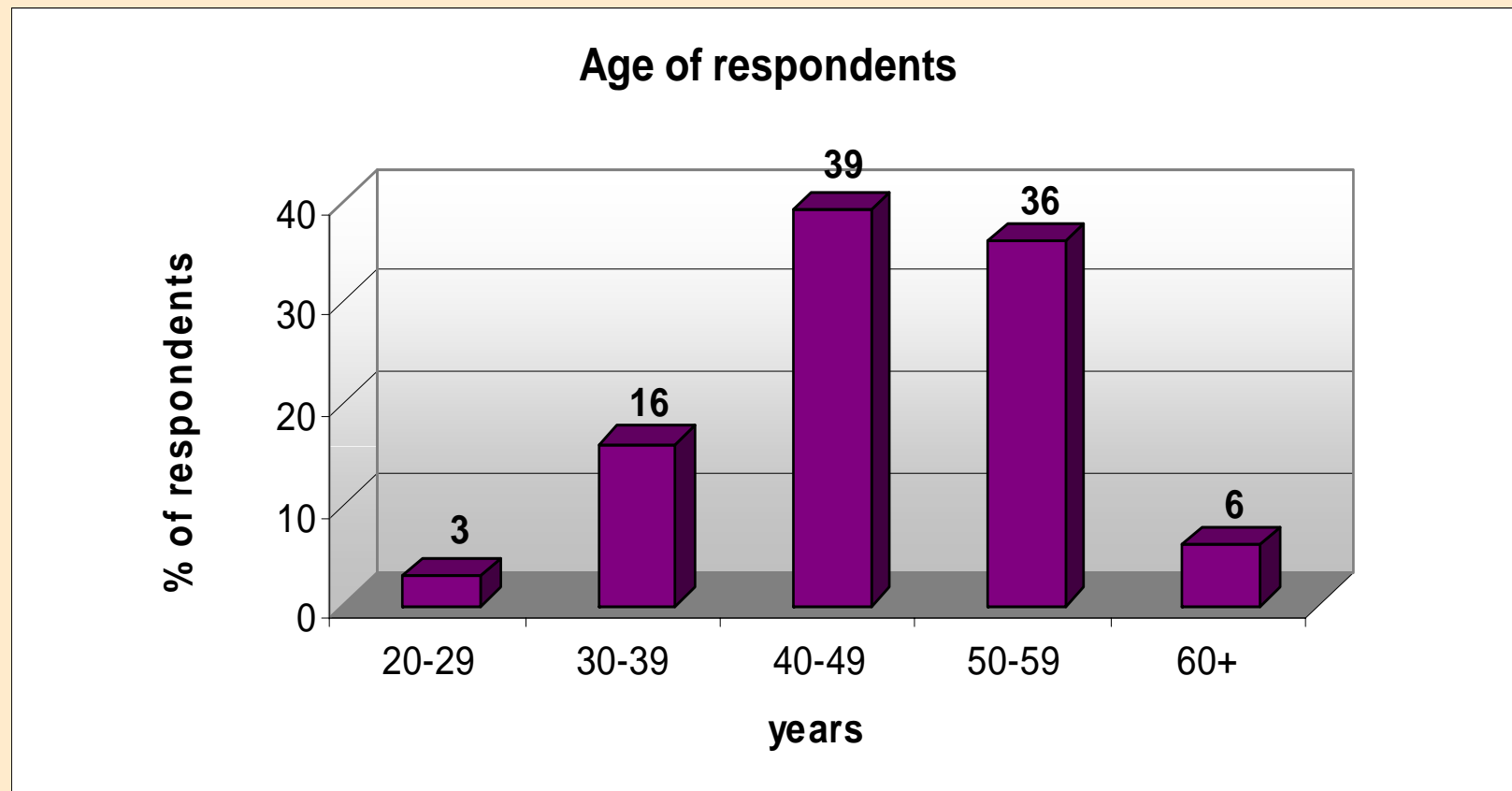


Workplace climate & gender



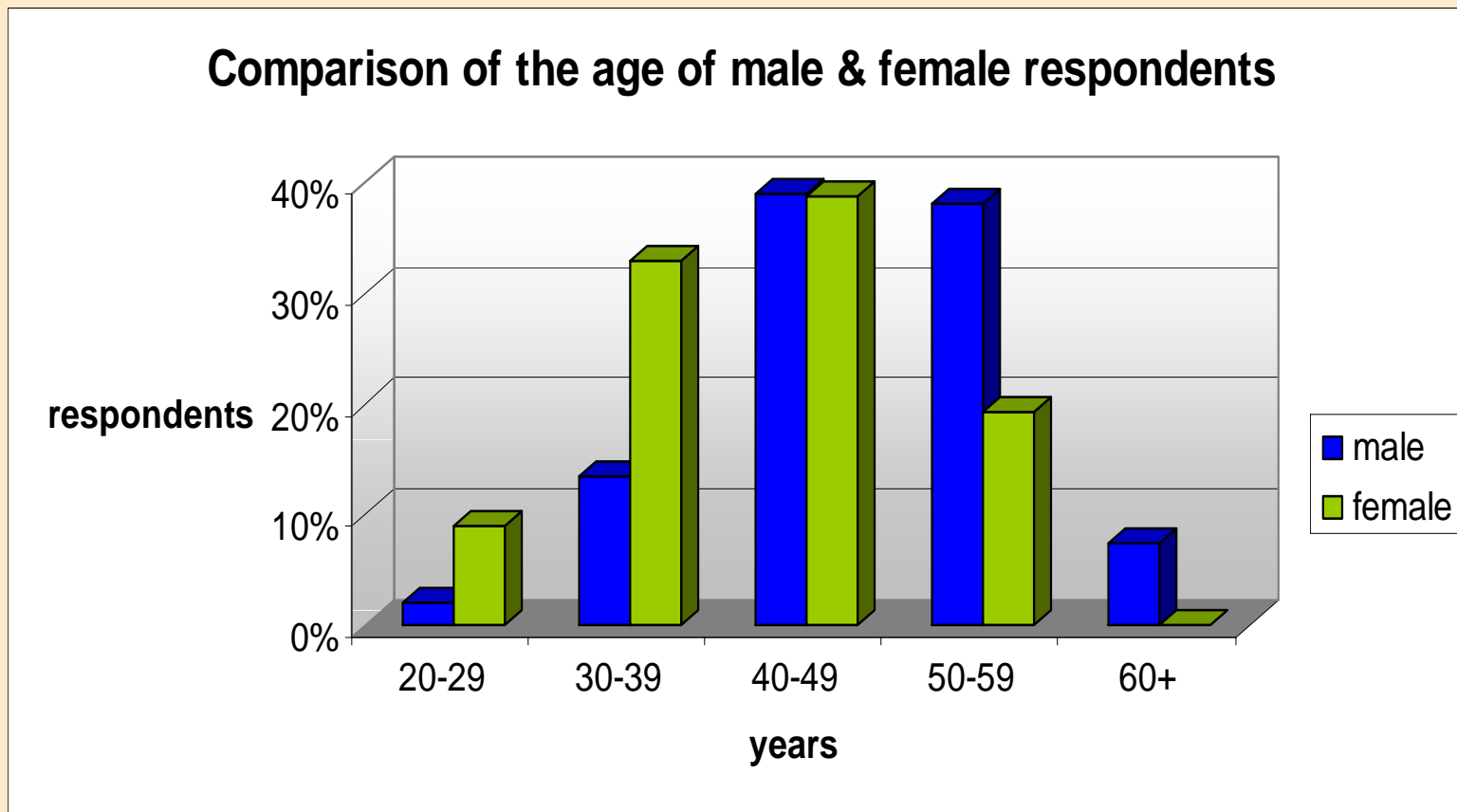


Age & gender



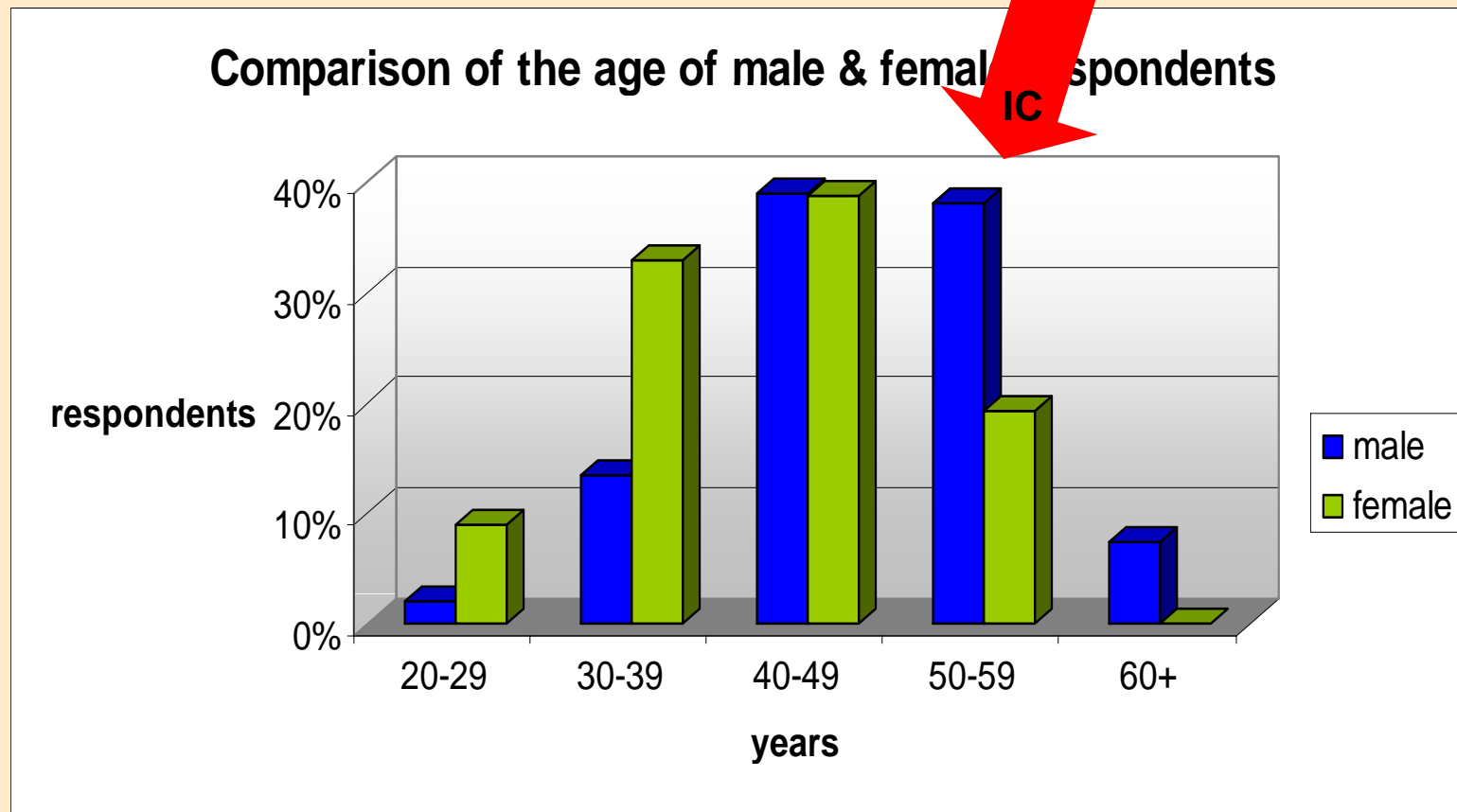


Age & gender

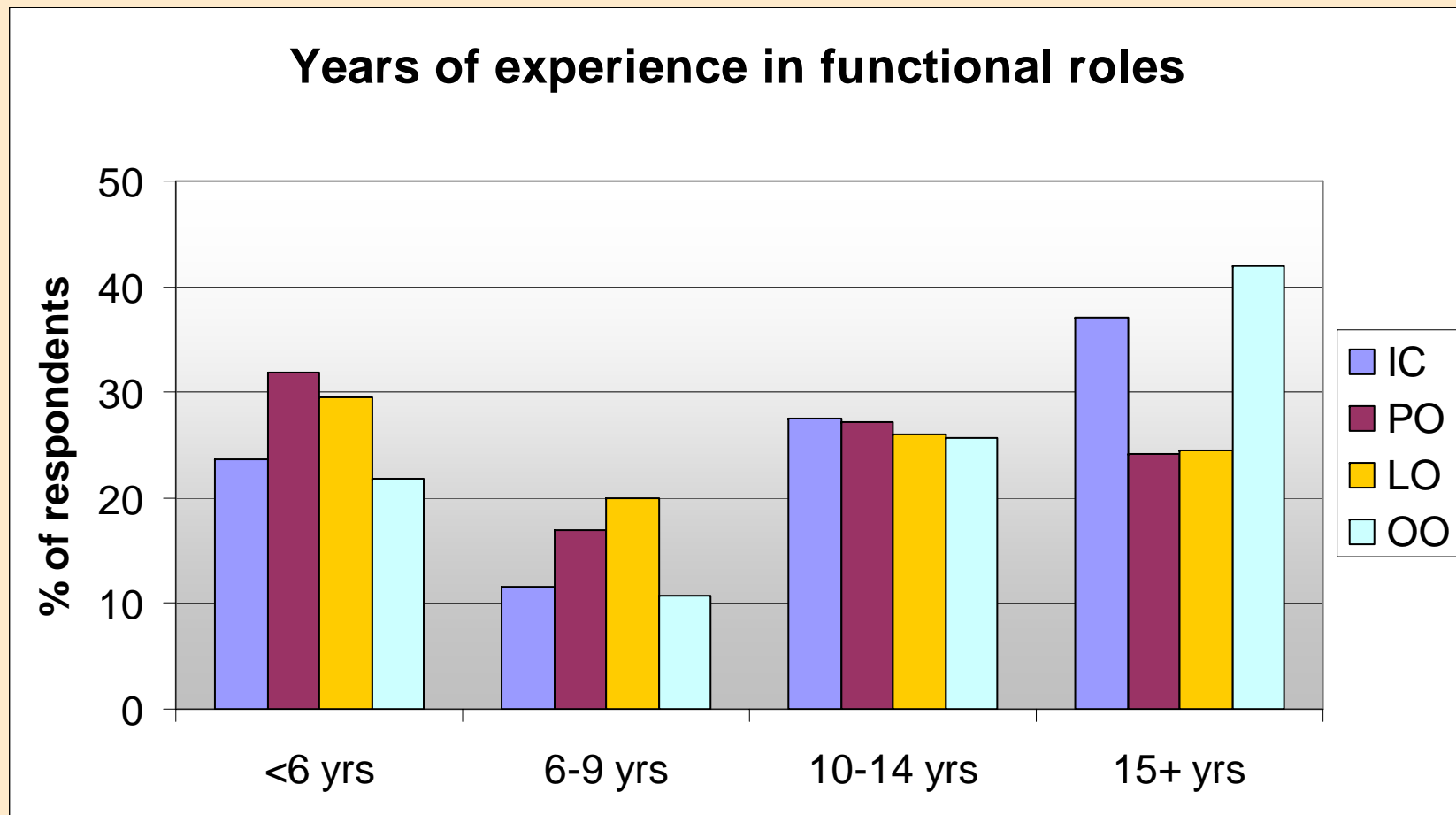




Age & gender



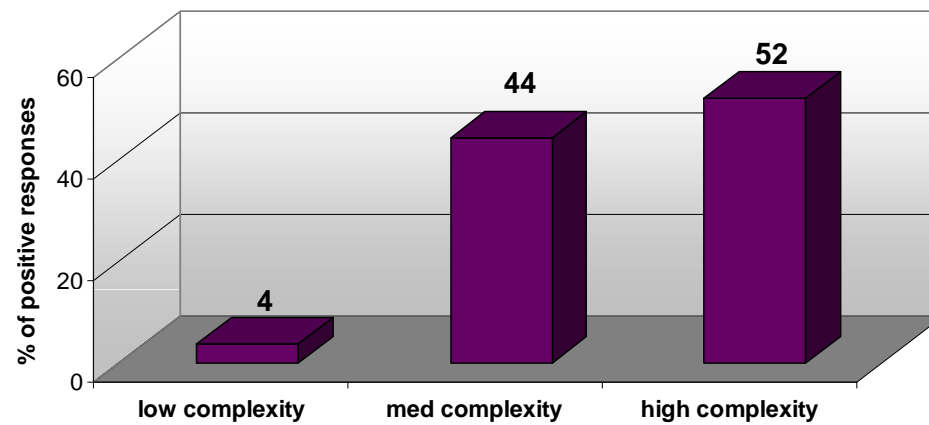
→ Experience in IMT functions



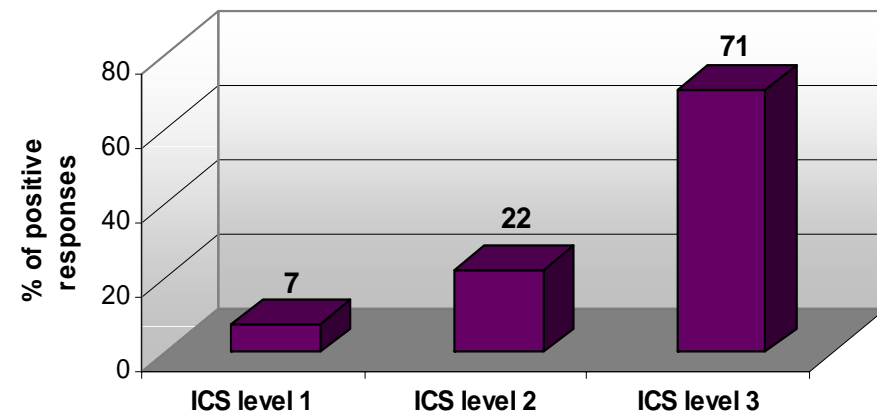


Incident complexity

Comparison of incident complexity



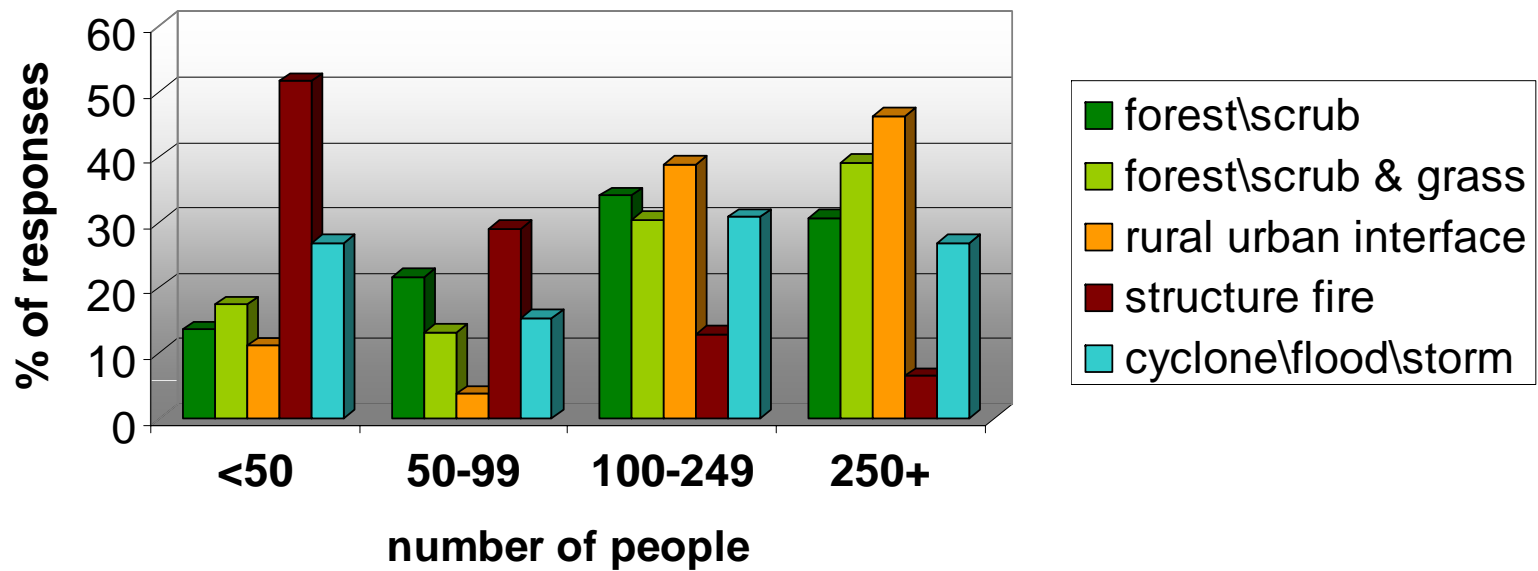
Comparison of incident levels





People in incidents

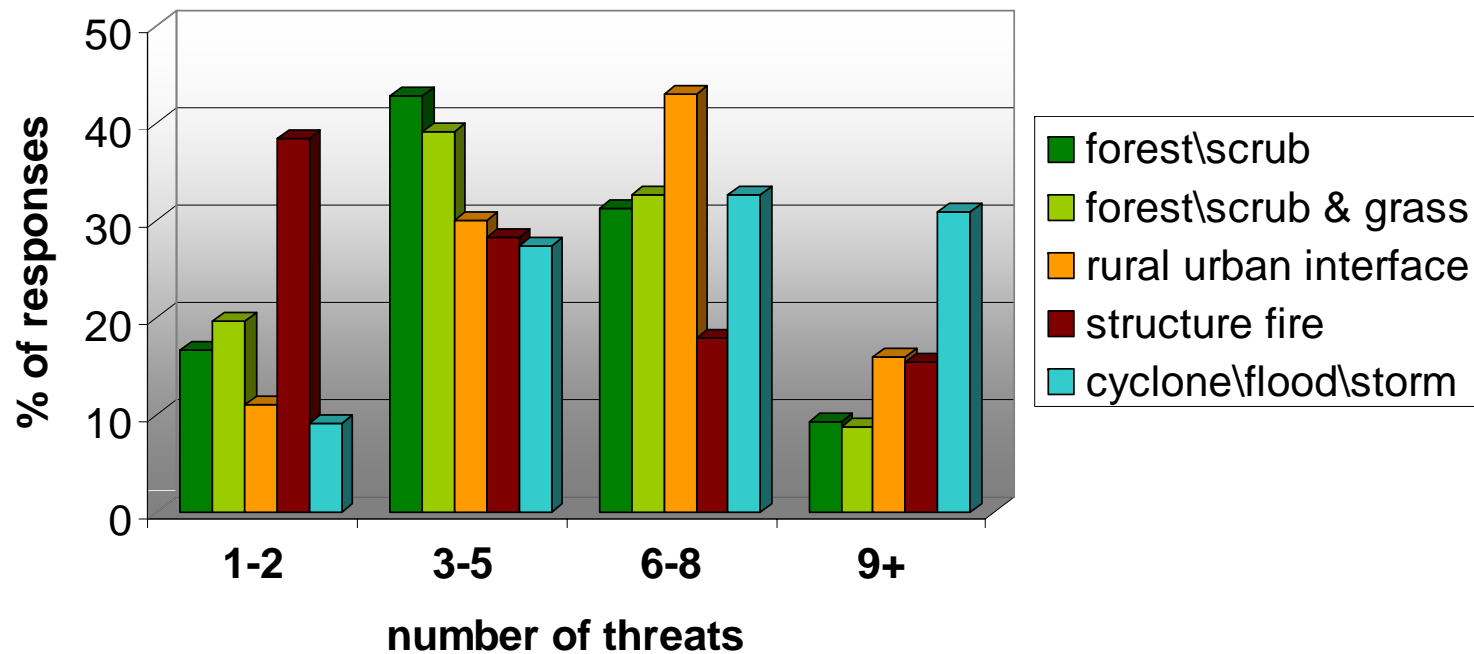
Comparison of the number of people involved in incidents





Threats in incidents

Comparison of the number of threats in incidents



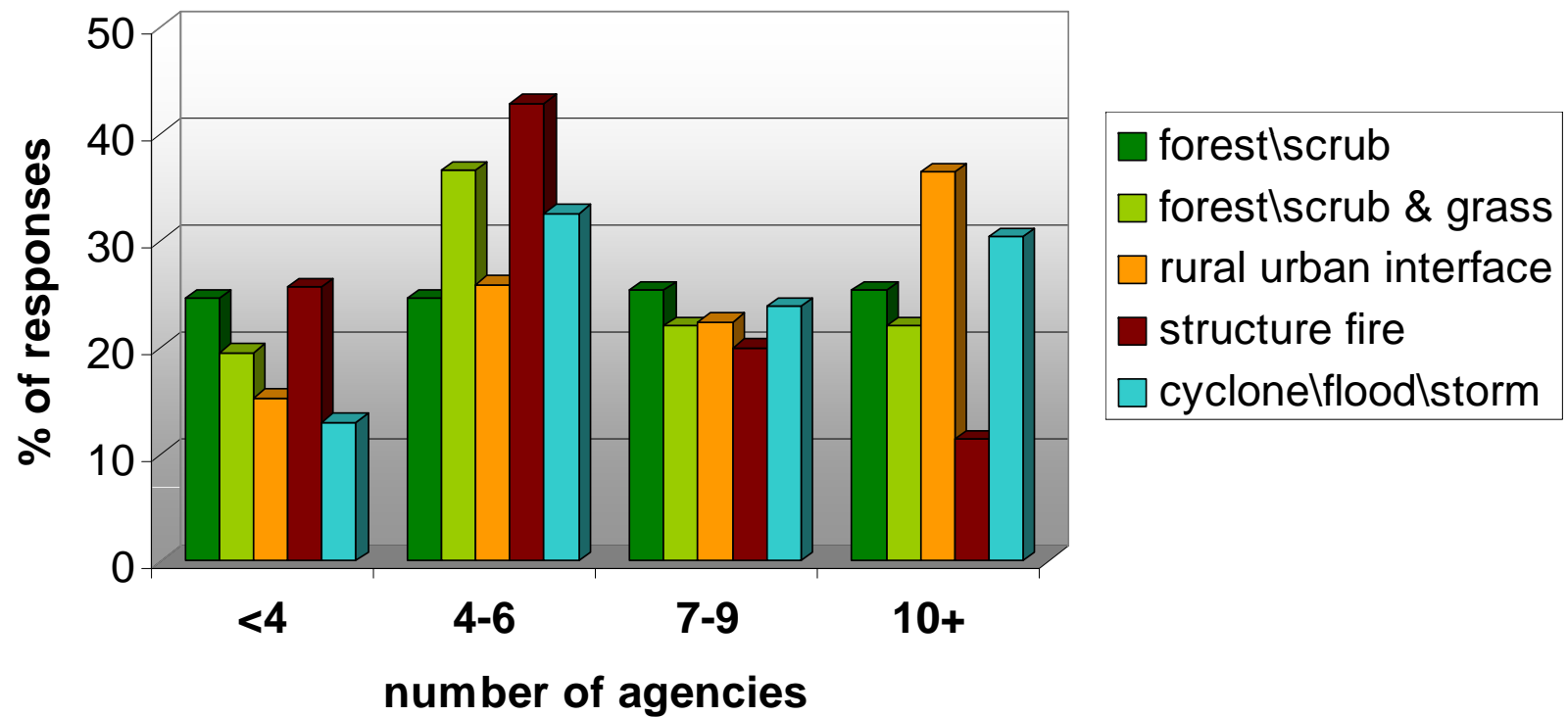
What was threatened by the incident?

- Life
- Homes
- High rise structures
- Commercial structures
- Other structures
- Forest/crops pastures
- Waterway values
- Environmental values
- Livestock & fences
- Gas
- Electricity



Agencies in incidents

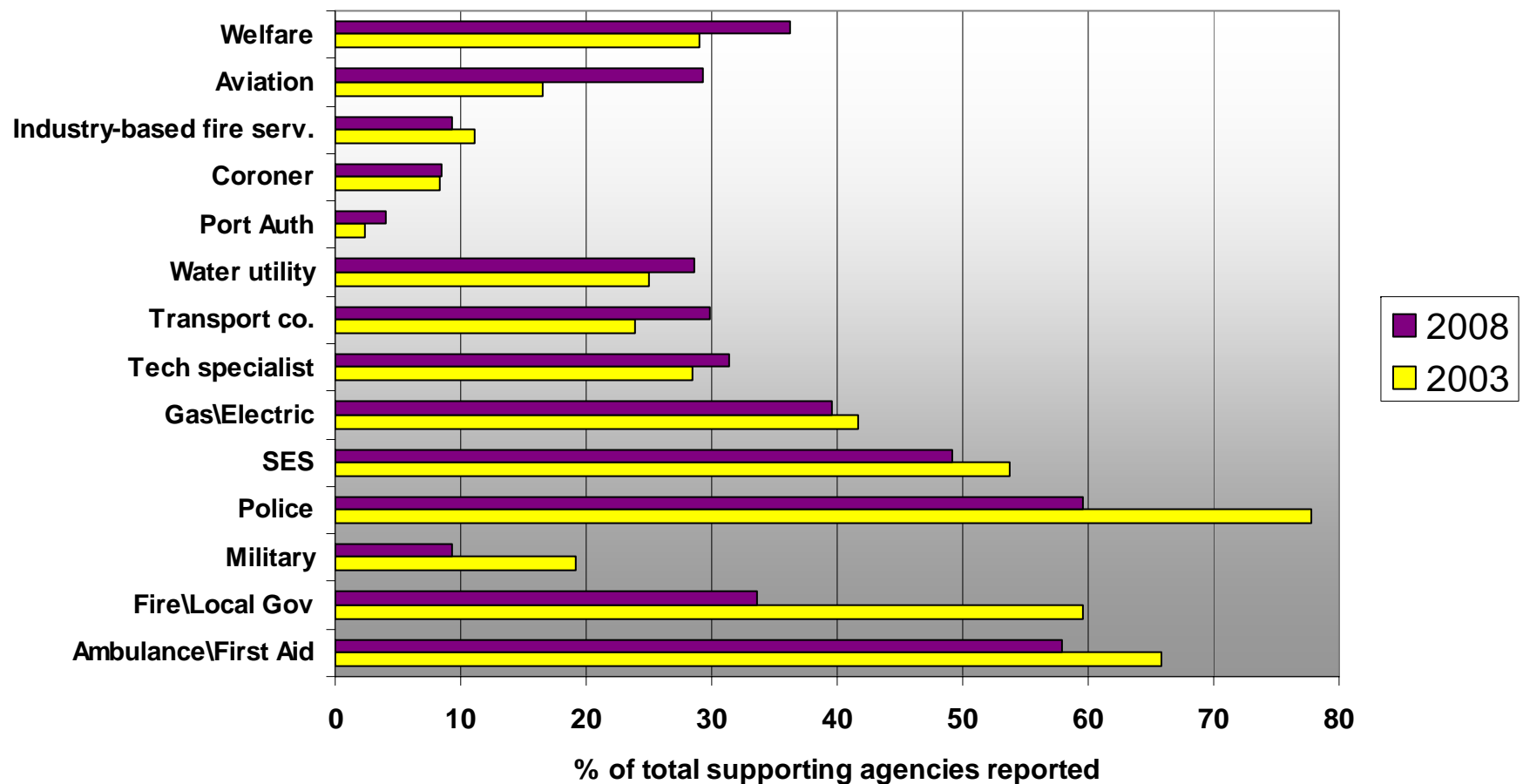
Comparison of supporting agencies in incidents



Supporting agencies

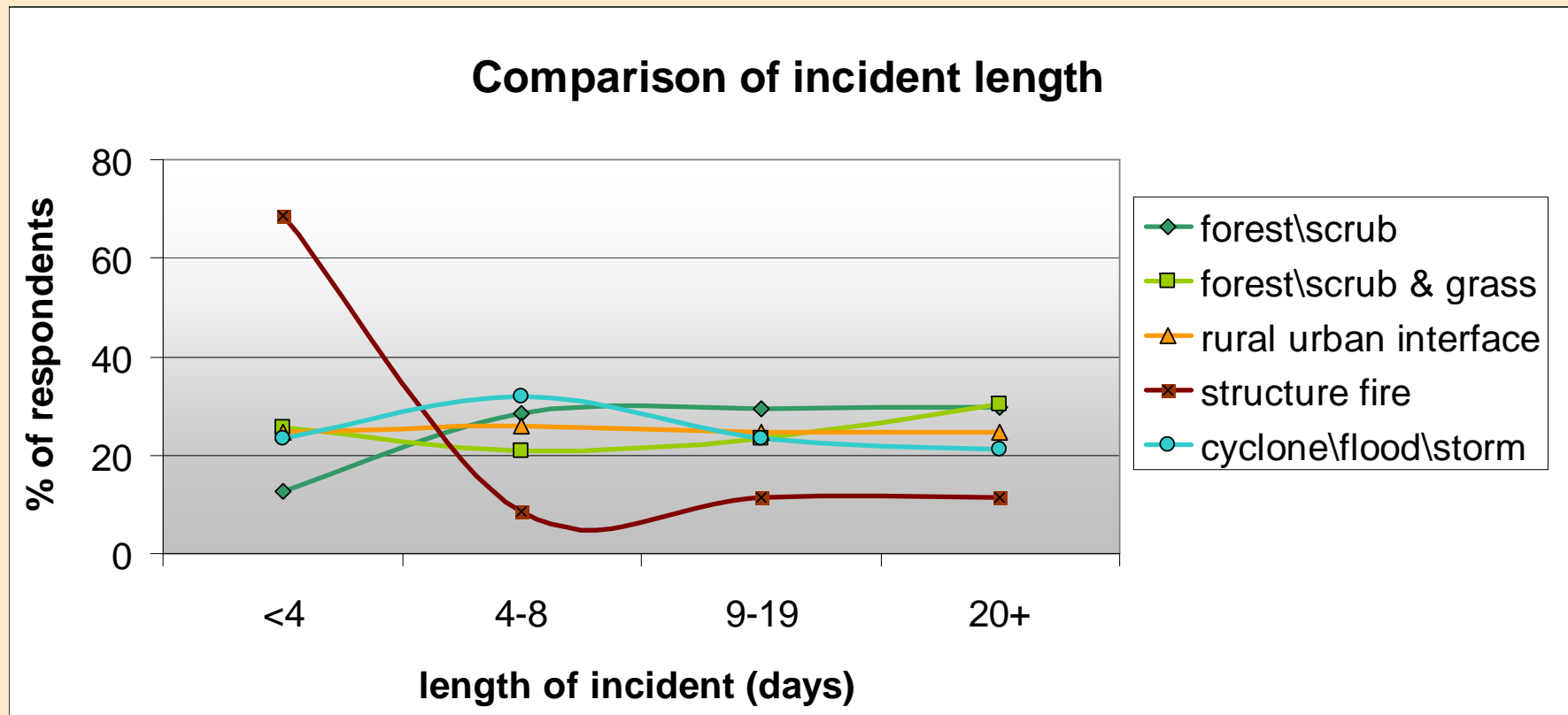


Supporting agencies reported in incidents

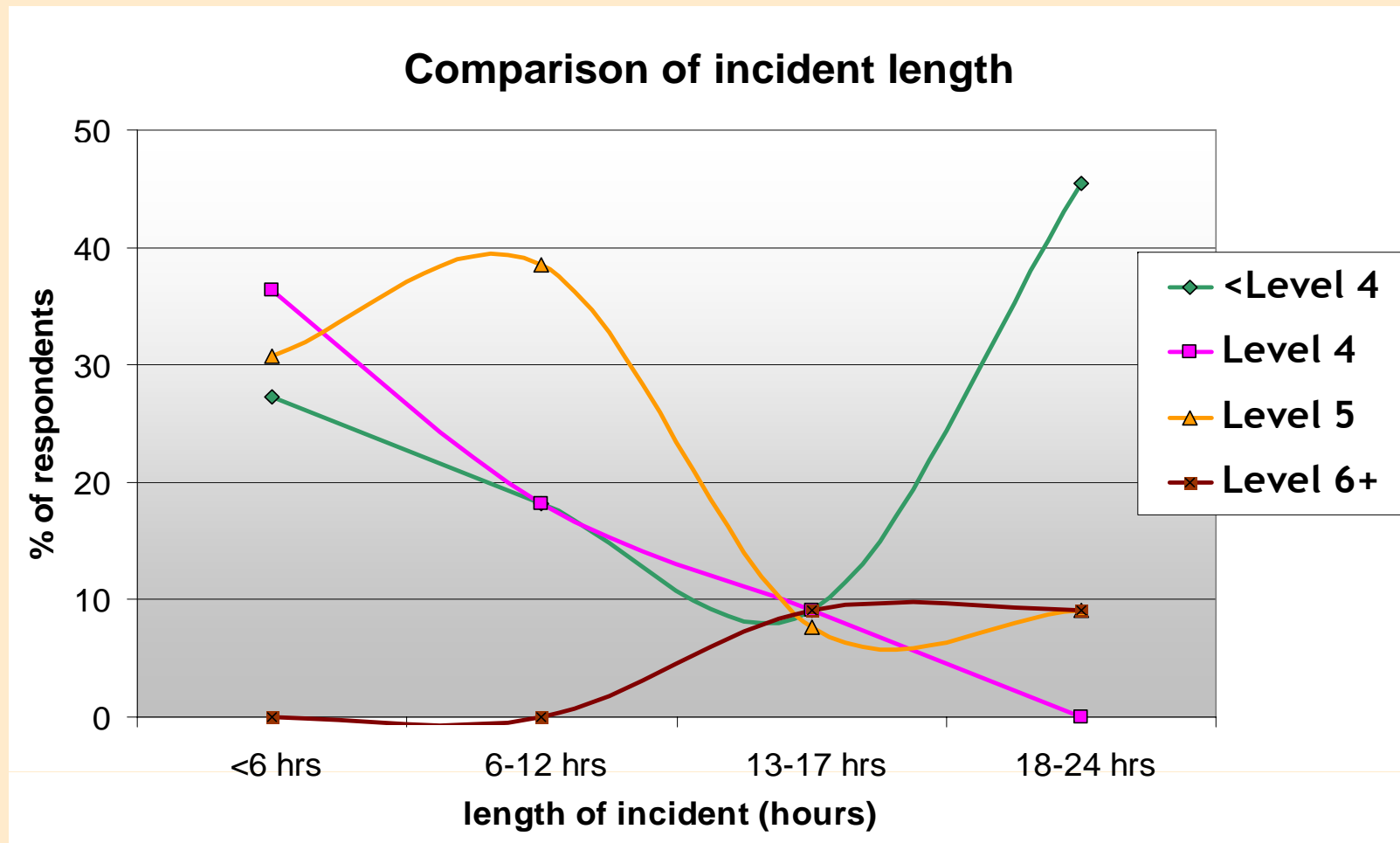




Incident length

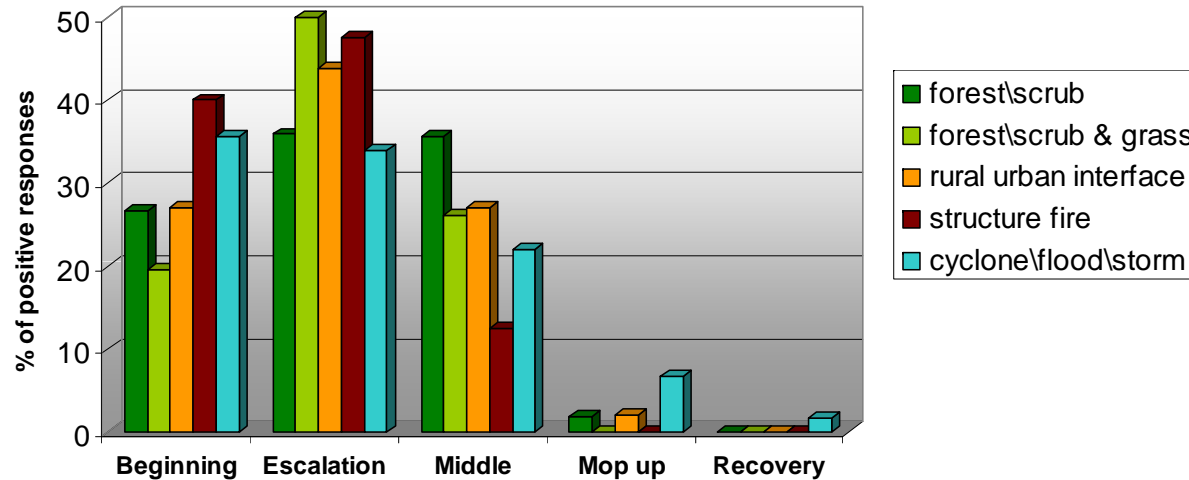


→ Incident length

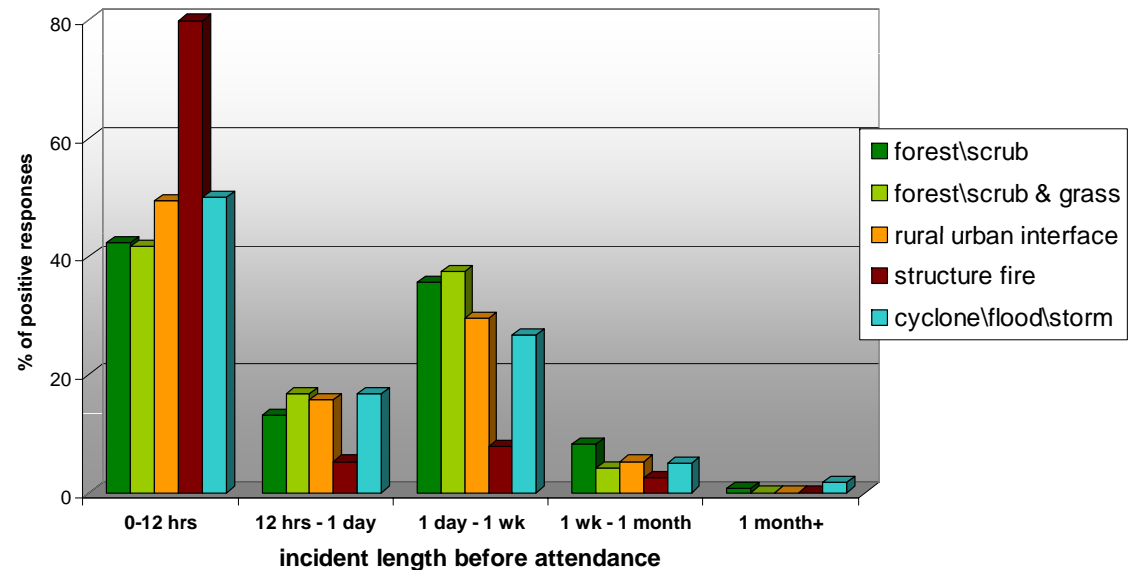


Incident attendance

Comparison: Phase of the incident



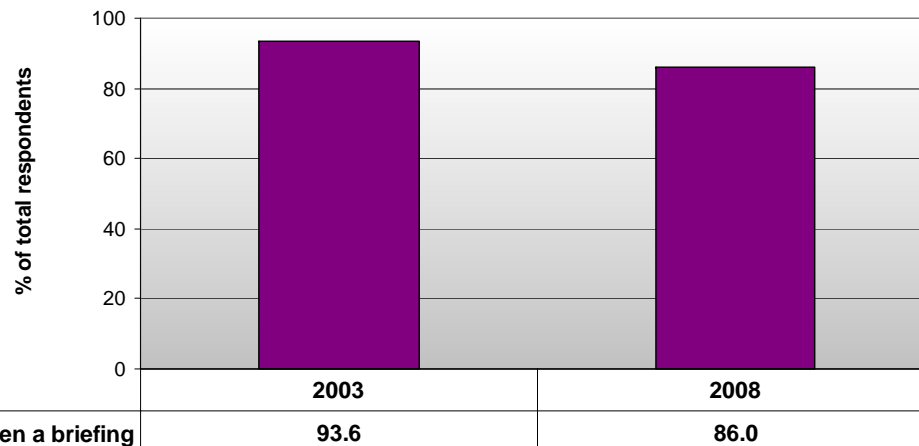
Comparison: How long the incident was going before attendance



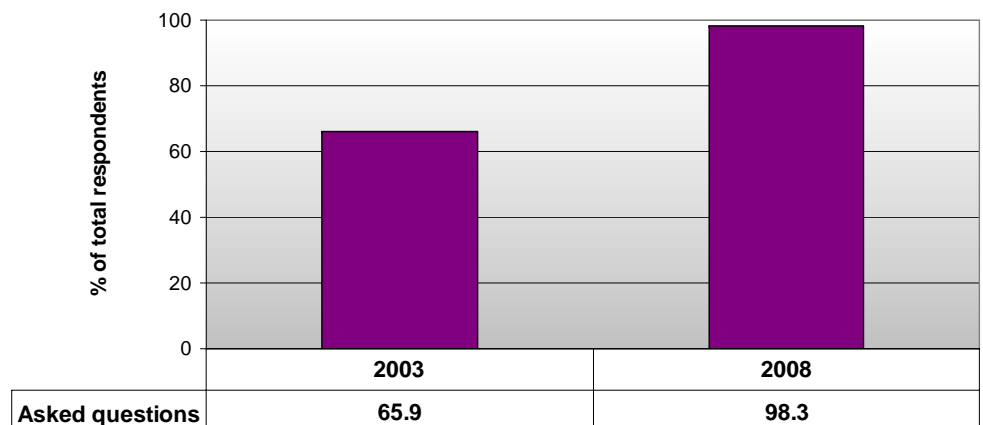
Briefings



Comparison: Were you given a briefing?



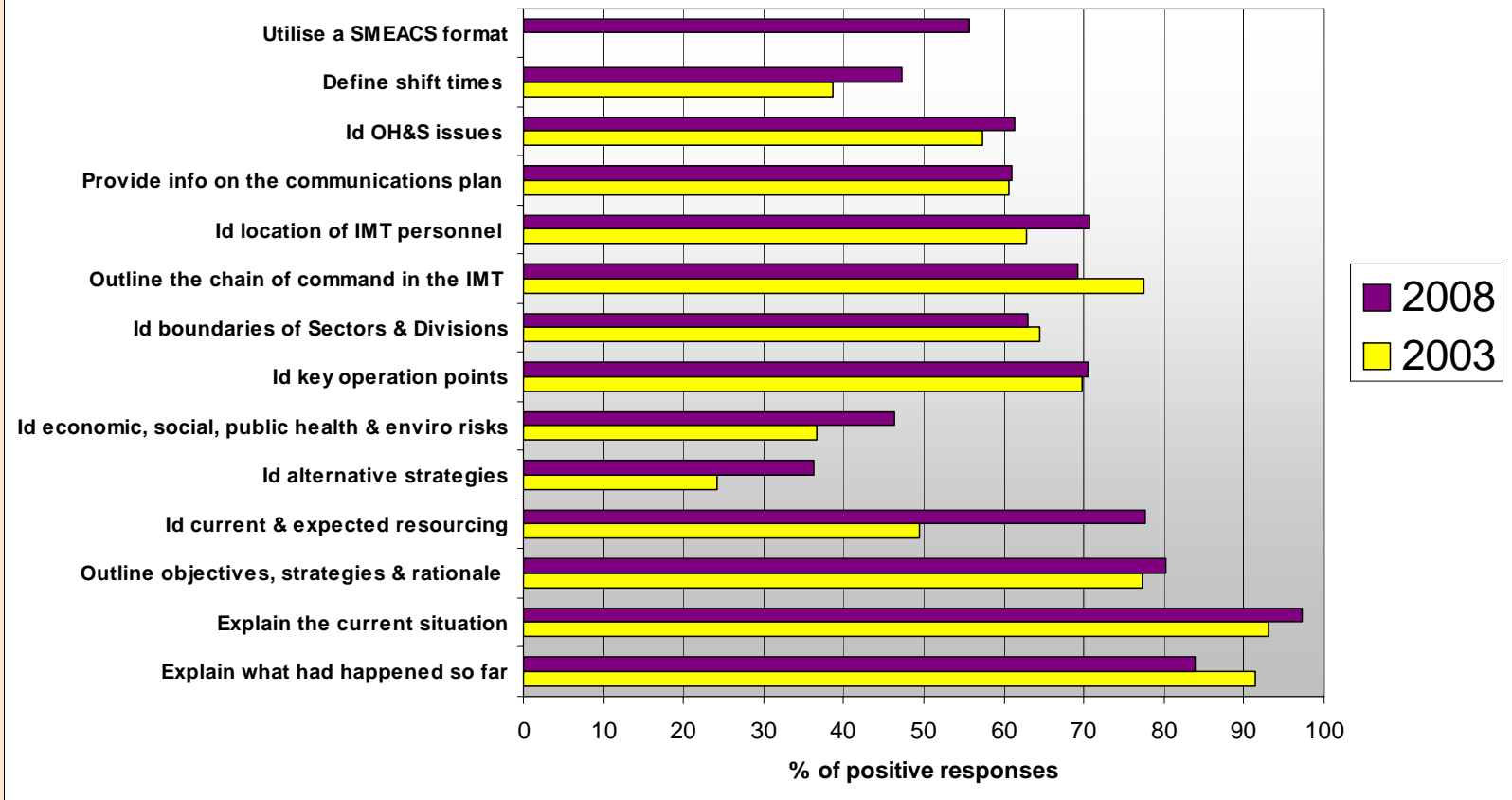
Comparison: Was there an opportunity to ask questions?





Briefings

Comparison: Did the briefing (where one was received)...?

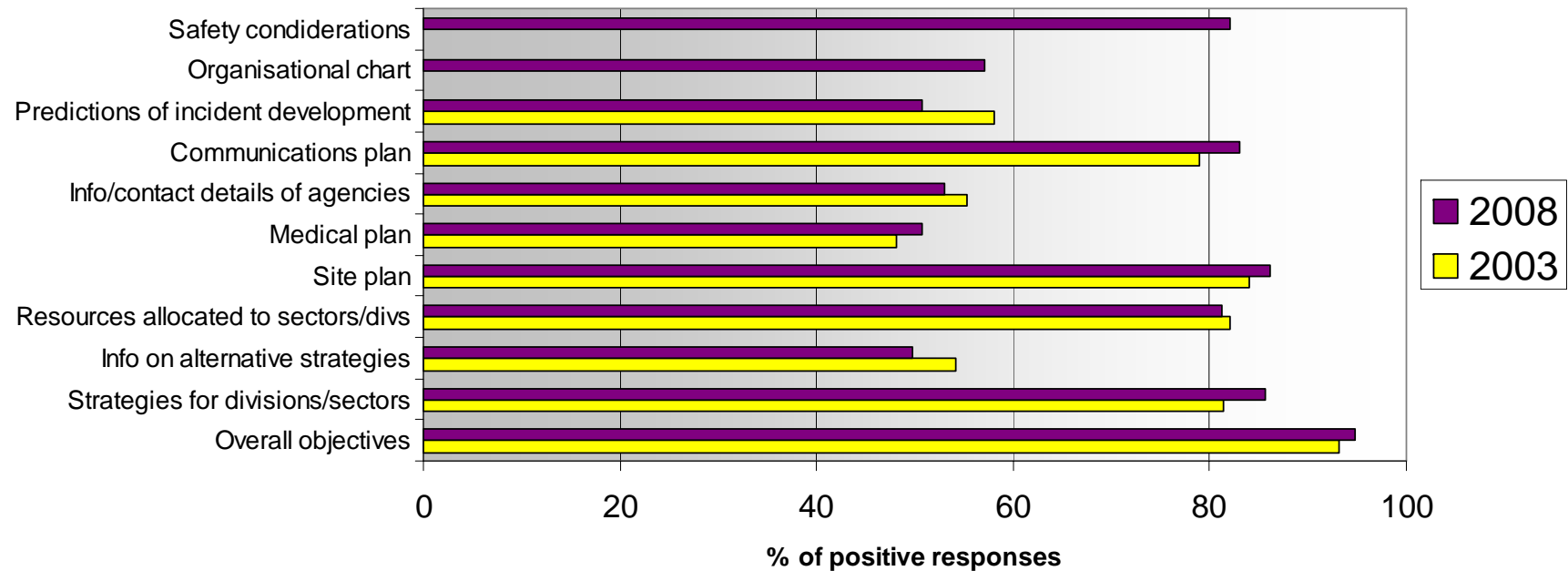




Incident Action Plan

	Did you receive an IAP?			
	yes (n)	yes (%)	no (n)	no (%)
2003	351	47.6	273	37.0
2008	319	55.1	218	37.7

Did the Incident Action Plan (where one was received) include...?





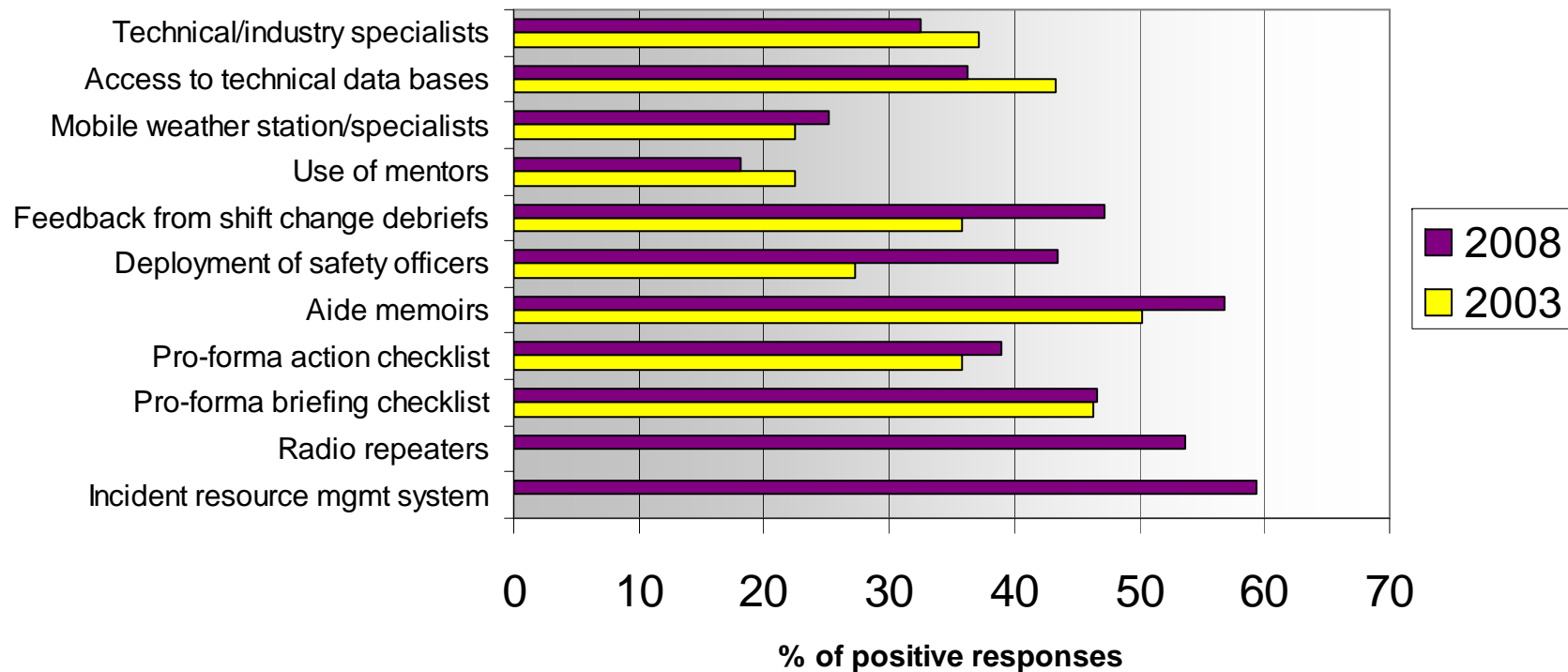
Incident Action Plan: Levels of satisfaction



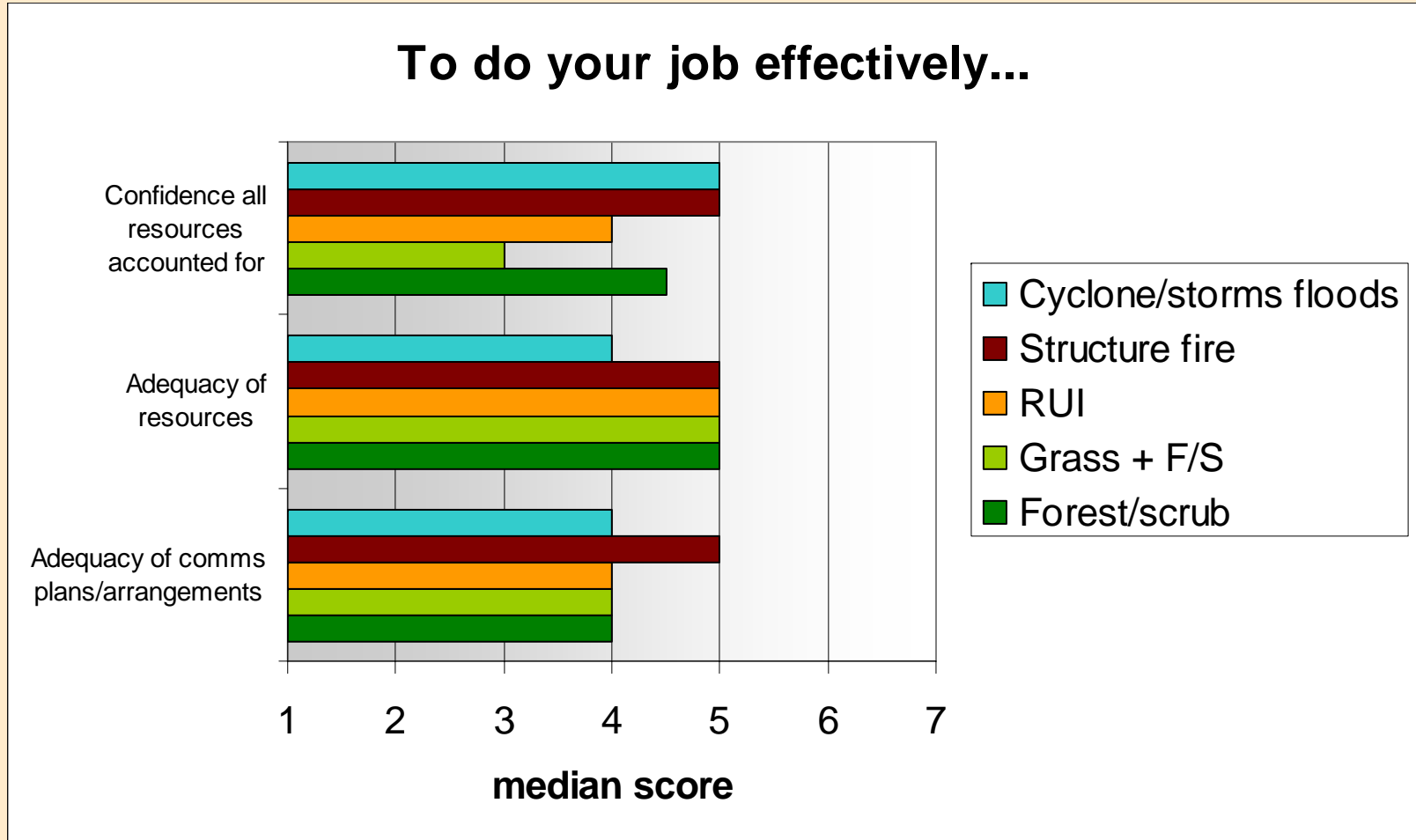


Risk management tools

Availability of risk management tools



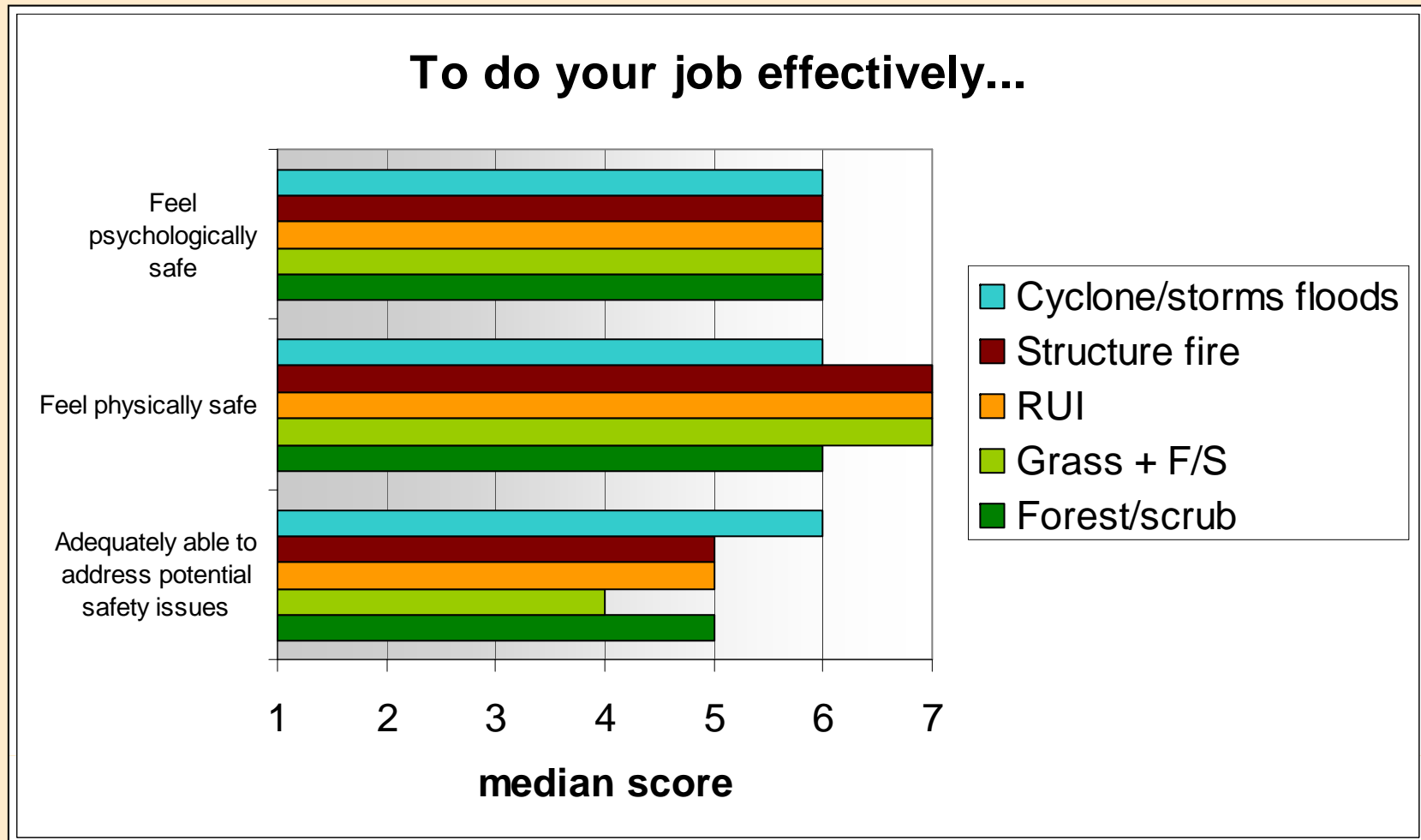
→ **Effective working environment**





Effective working environment

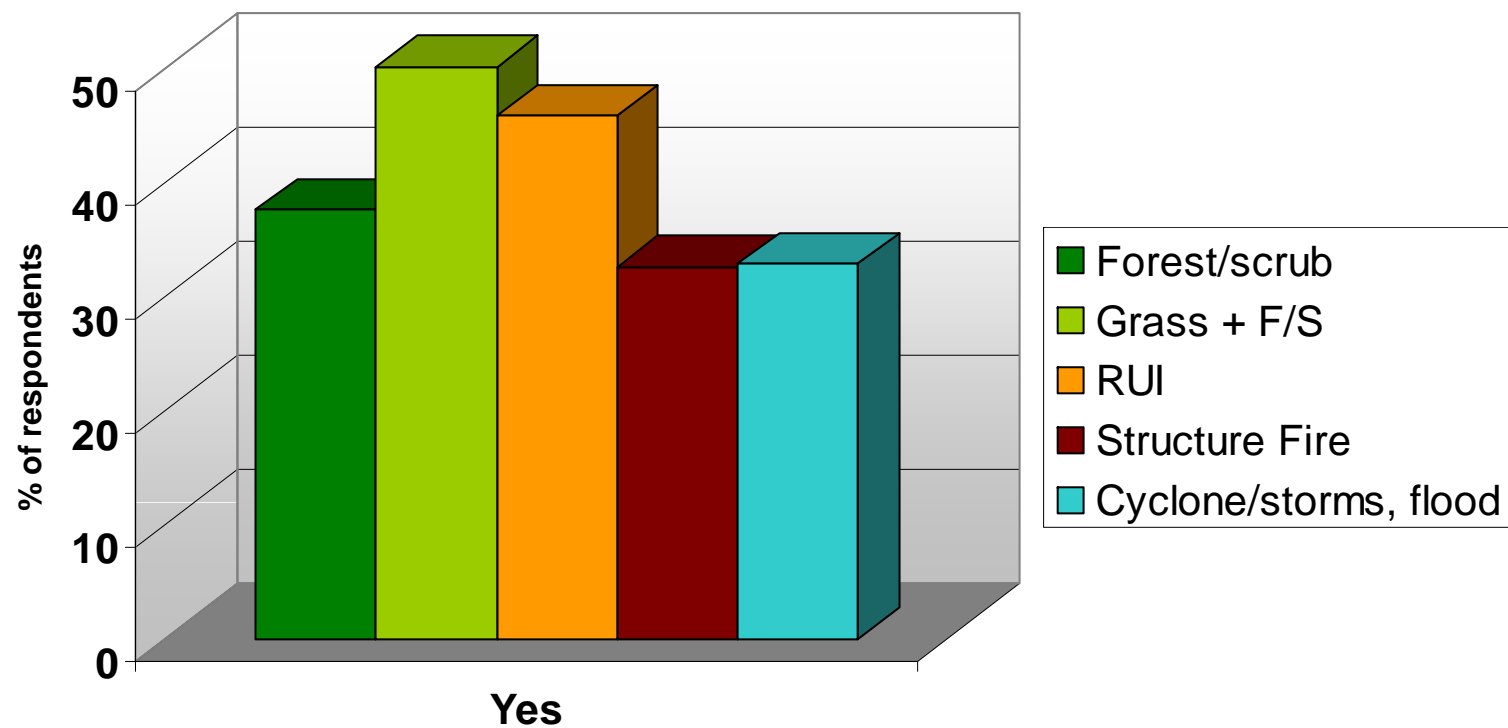
To do your job effectively...





During the shift

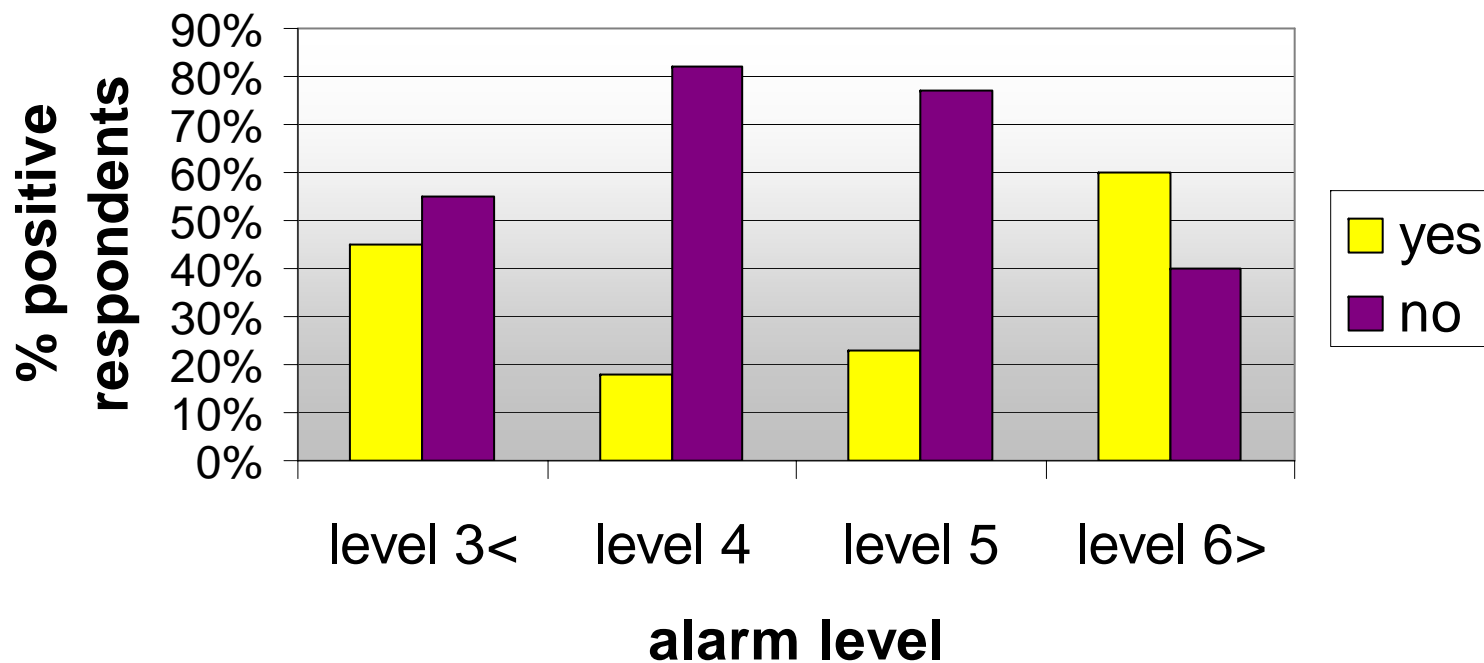
Were there any factors that prevented you from doing your job?



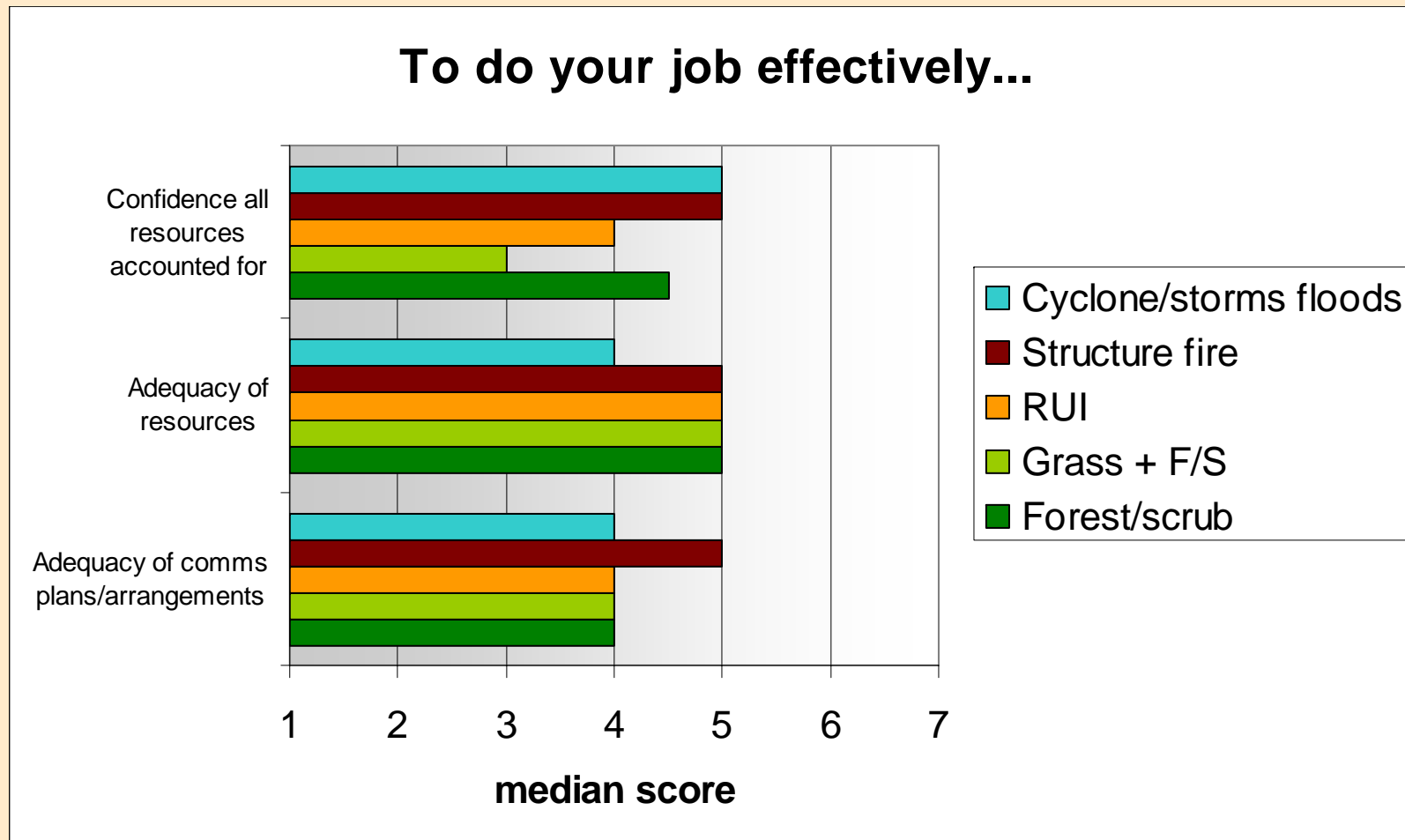


Where there any factors that prevented you from doing your job?

Existence of preventing factors in incidents according to alarm levels

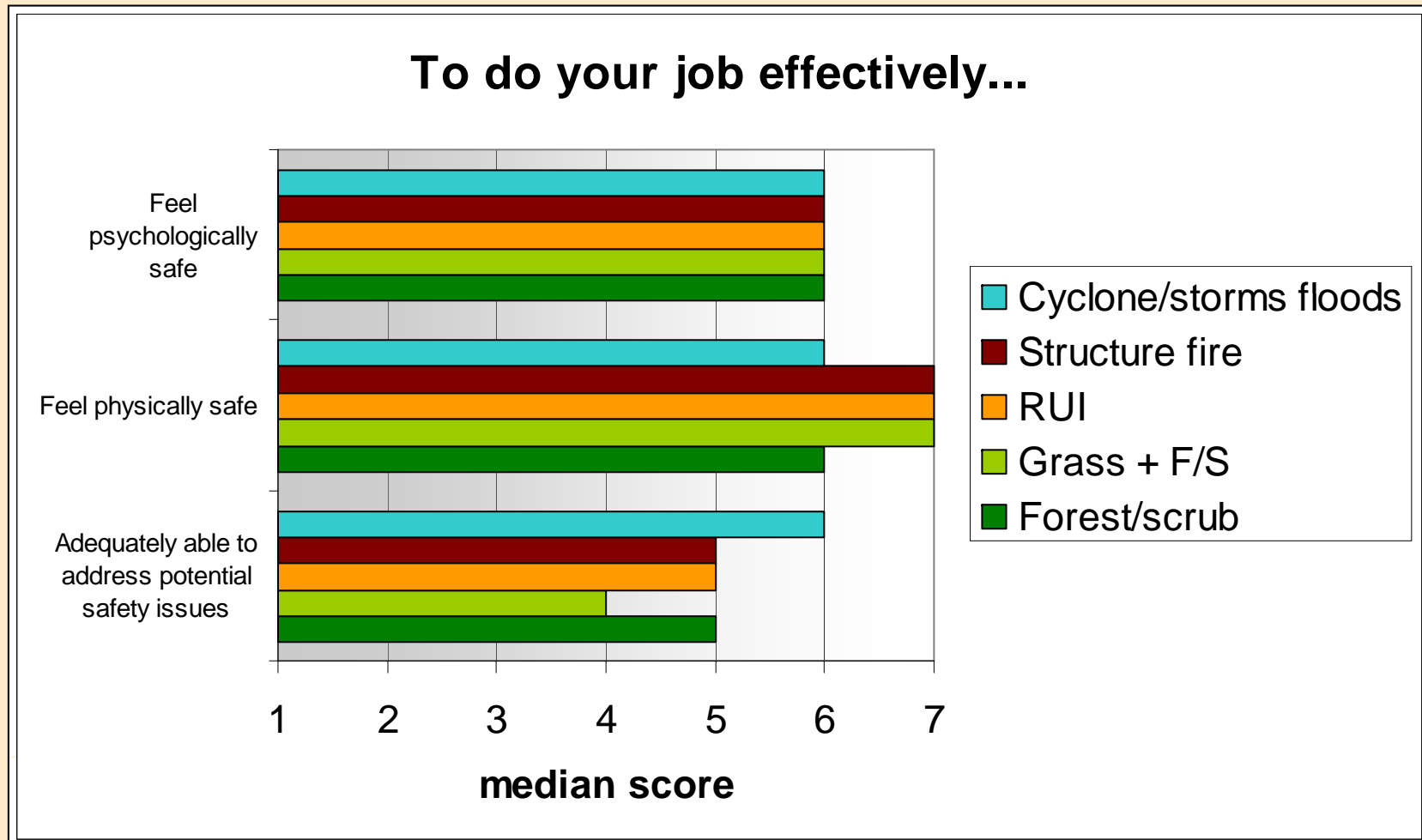


→ Effective working environment



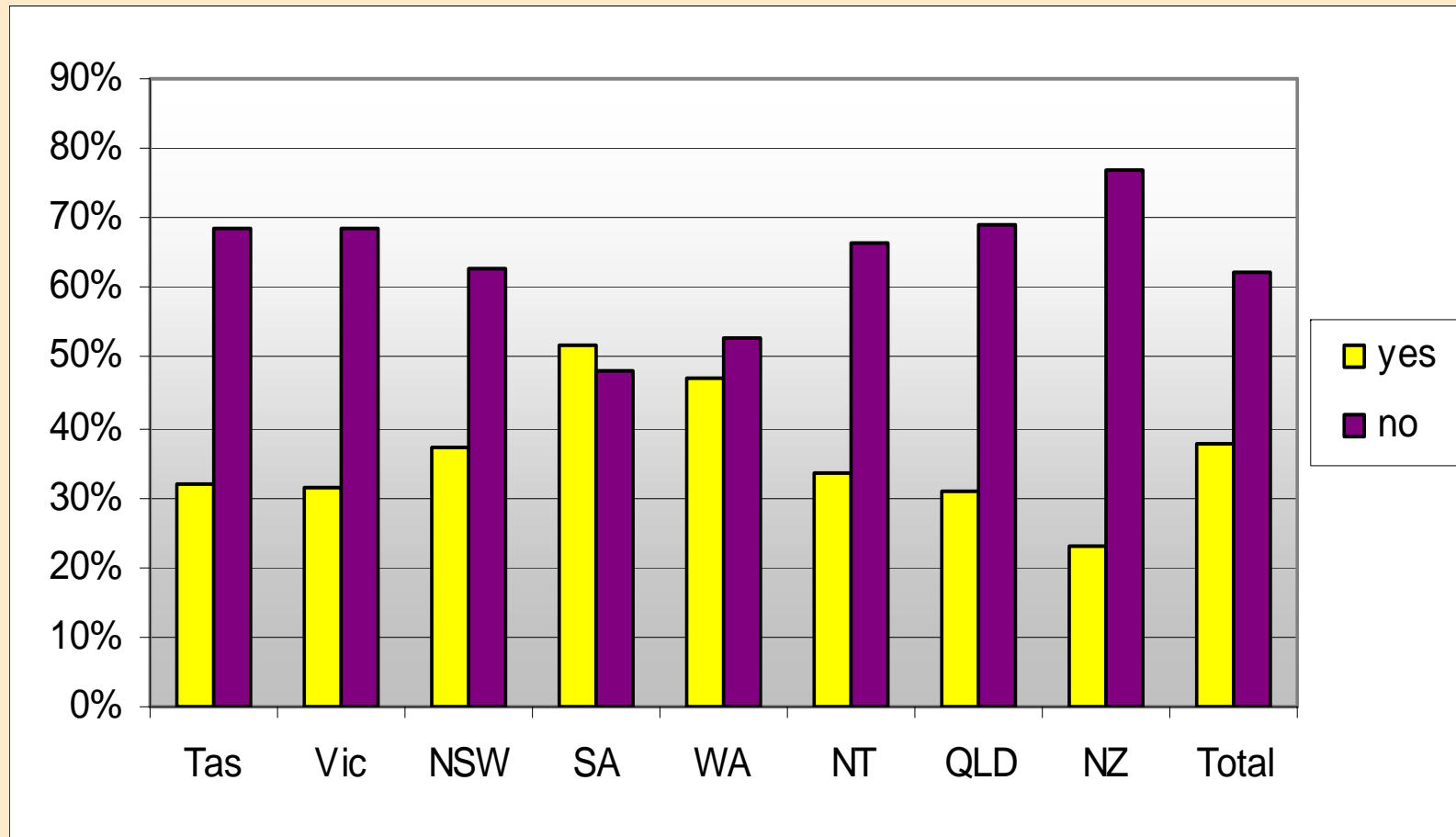


Effective working environment



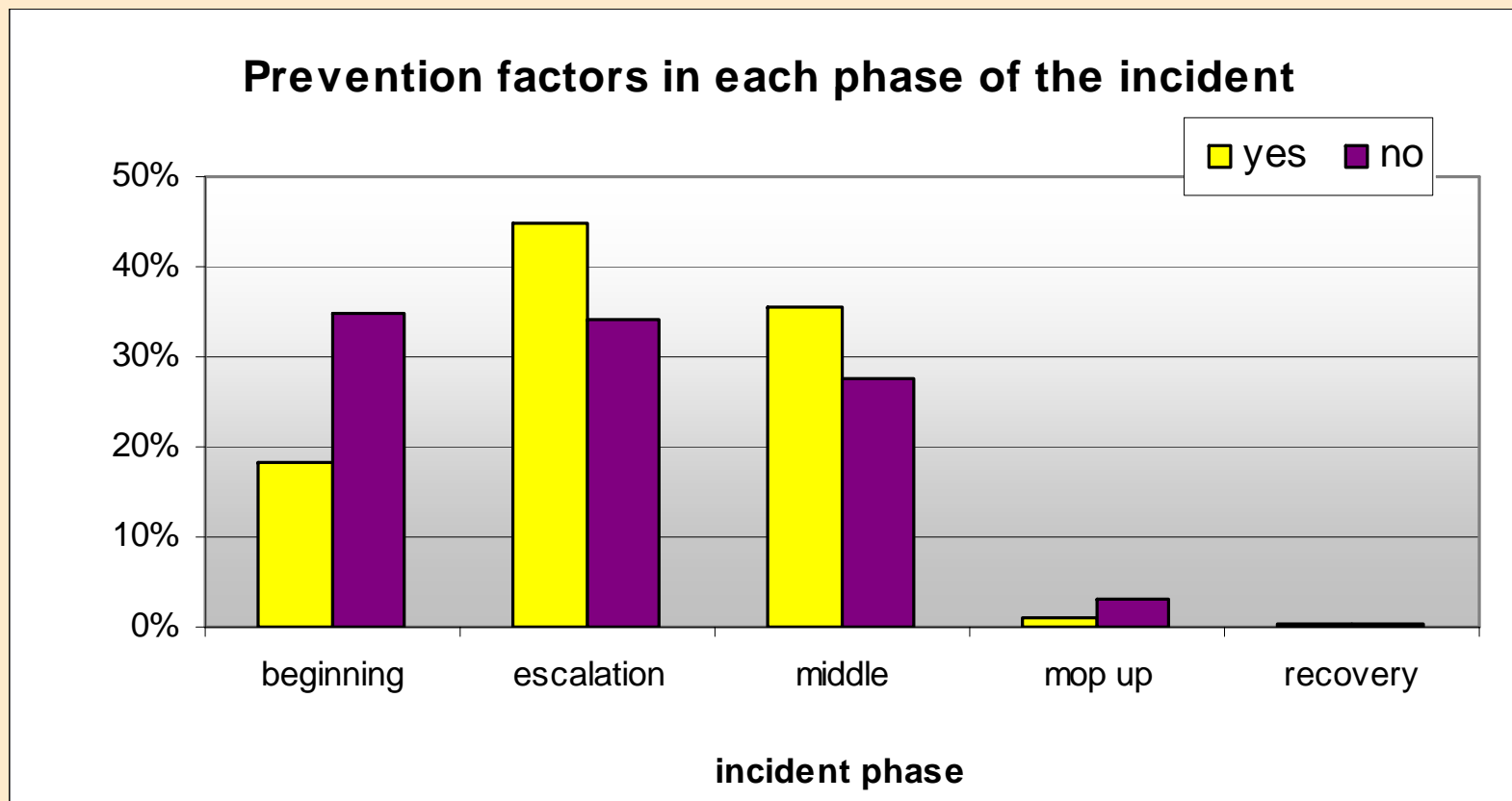


Were there any factors that prevented you from doing your job?



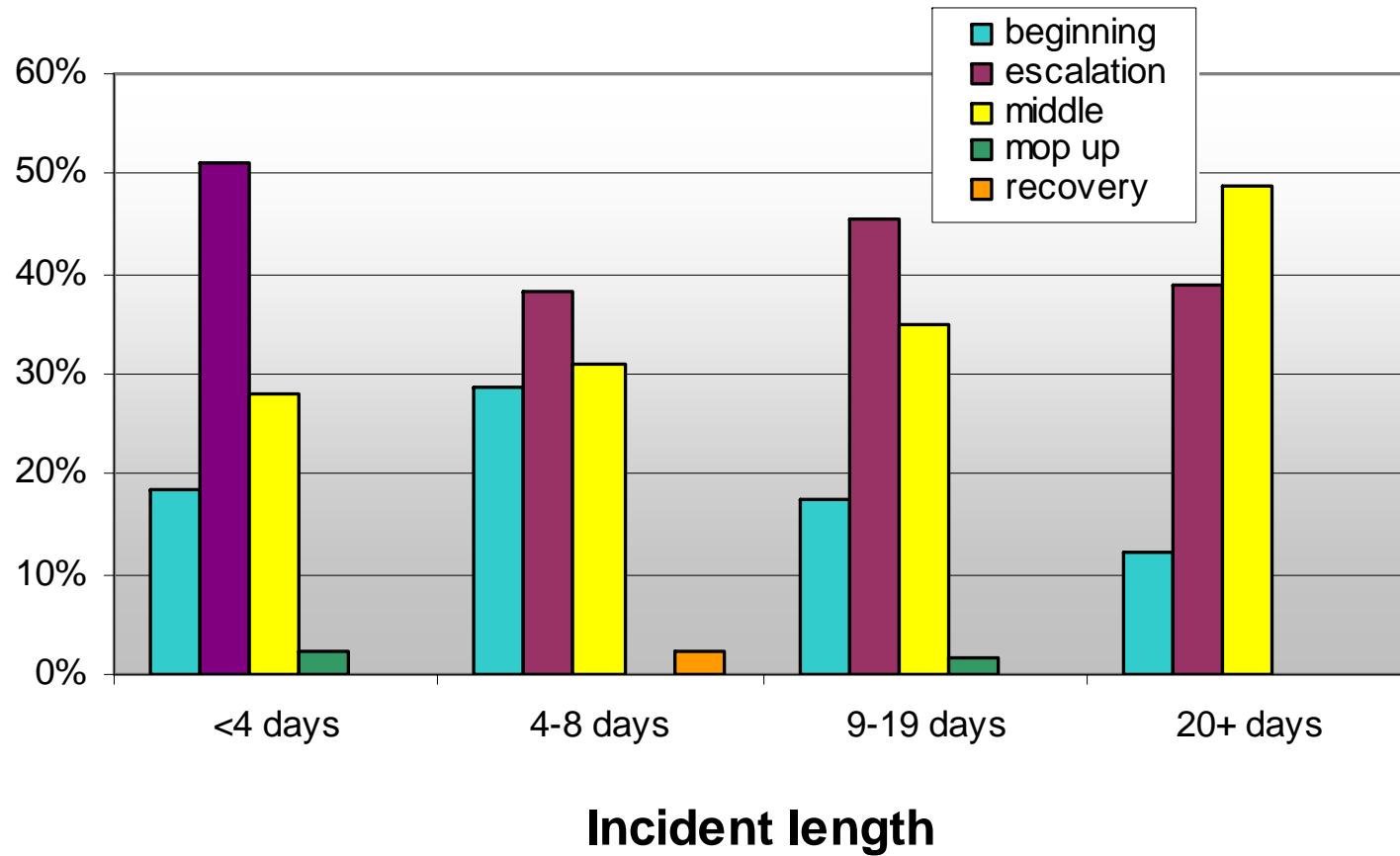


Were there any factors that prevented you from doing your job?





Prevention factor - Days by Incident Shift phase

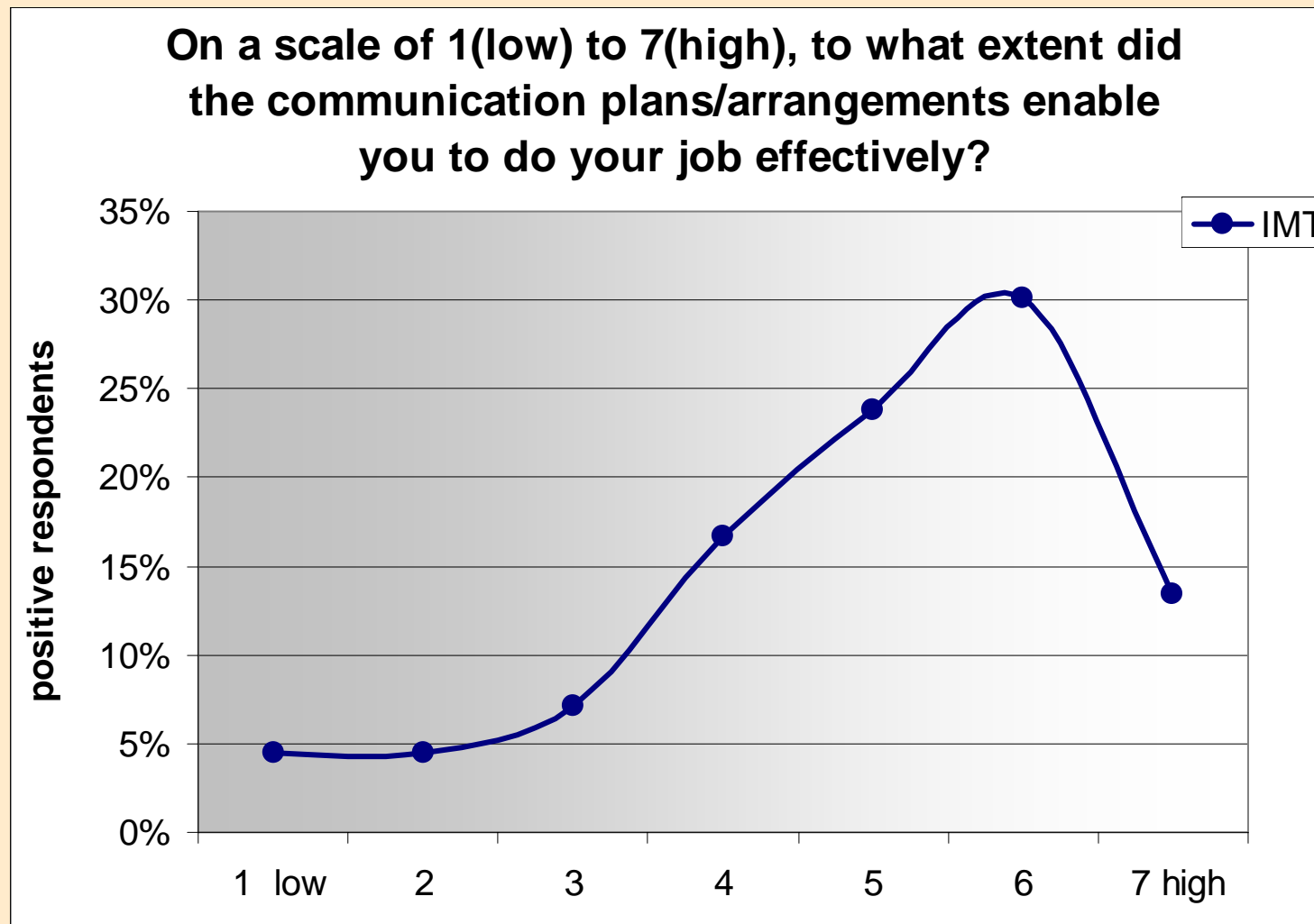


During the shift

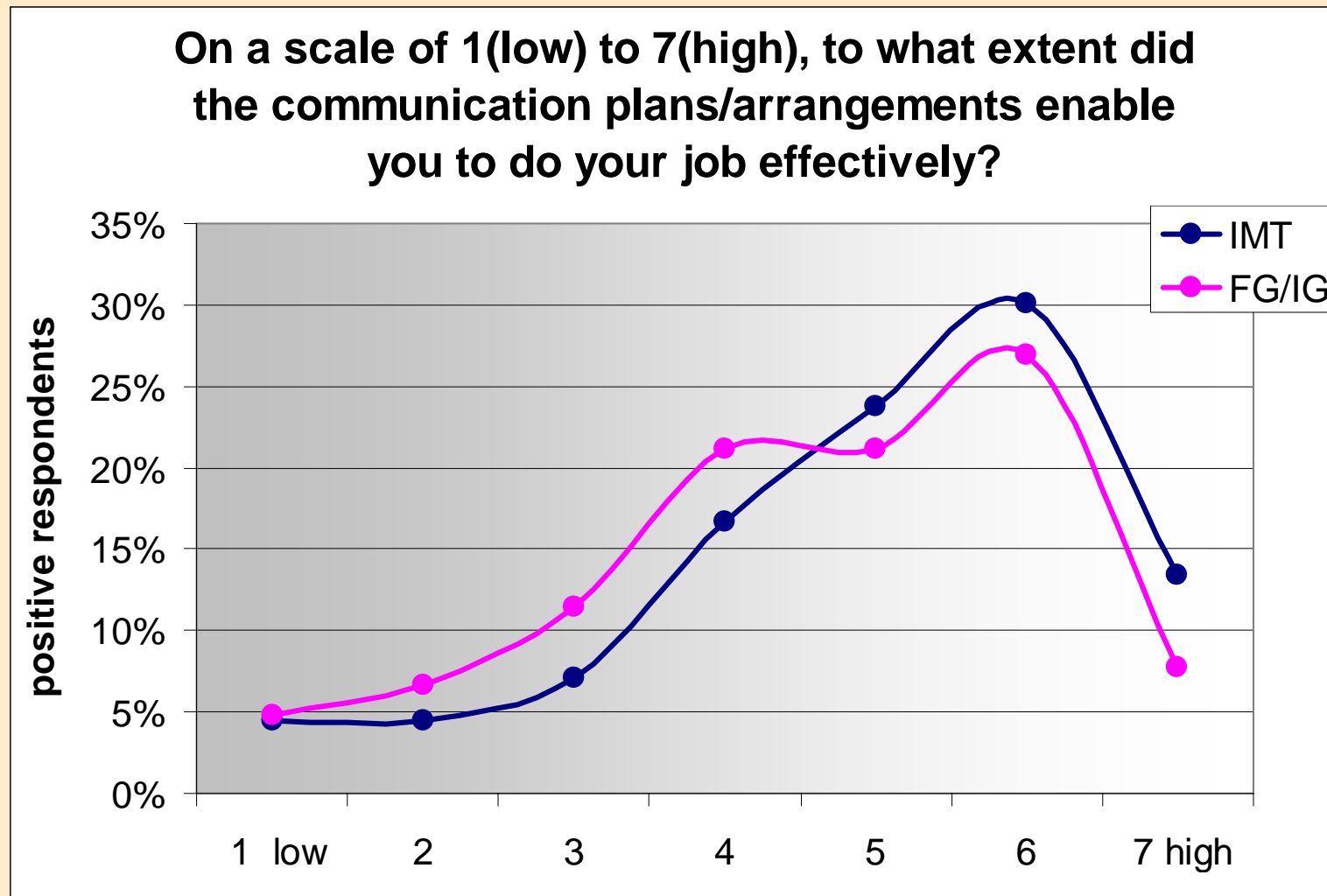


On a scale of 1(low) to 7(high), to what extent did the communication plans/arrangements enable you to do your job effectively?

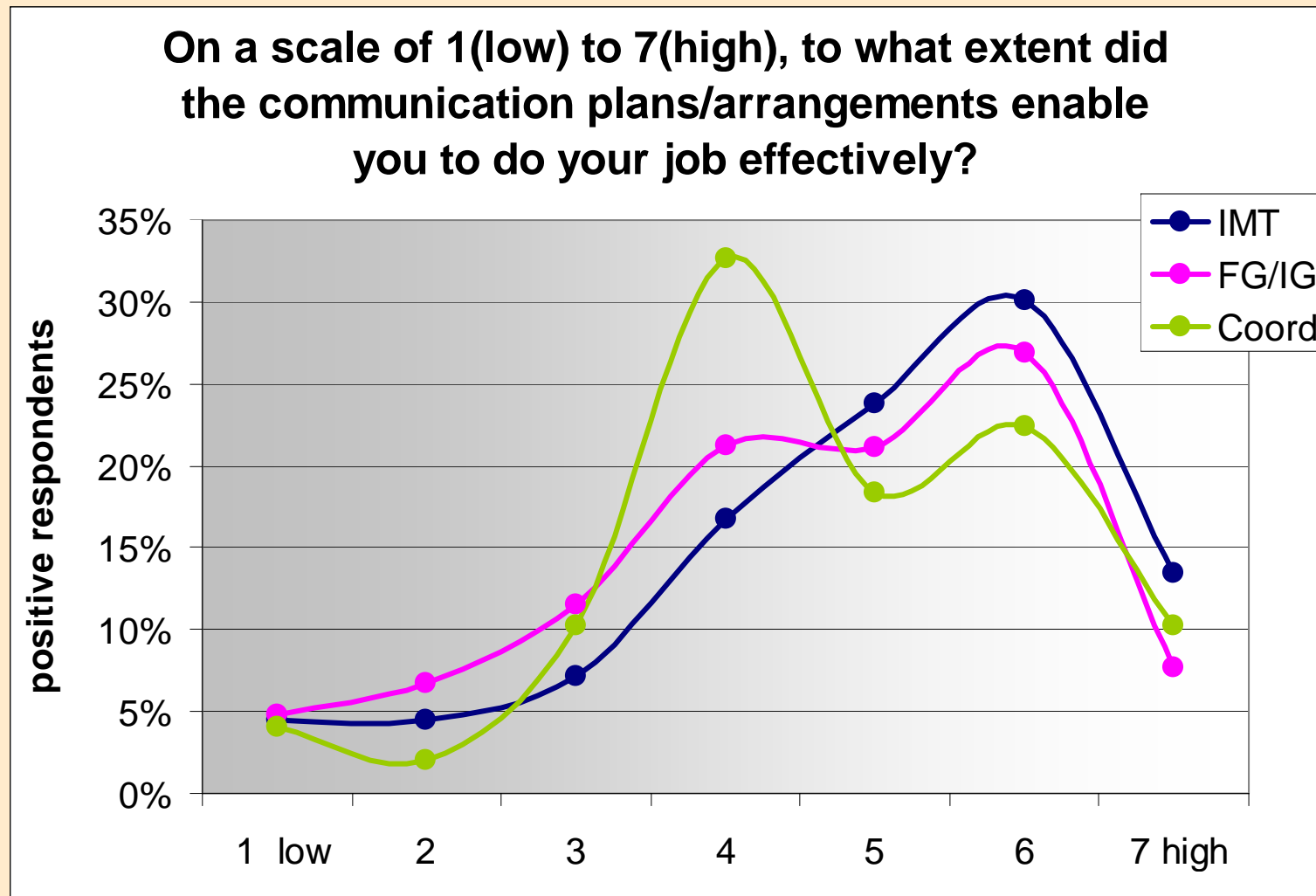
During the shift



During the shift



During the shift

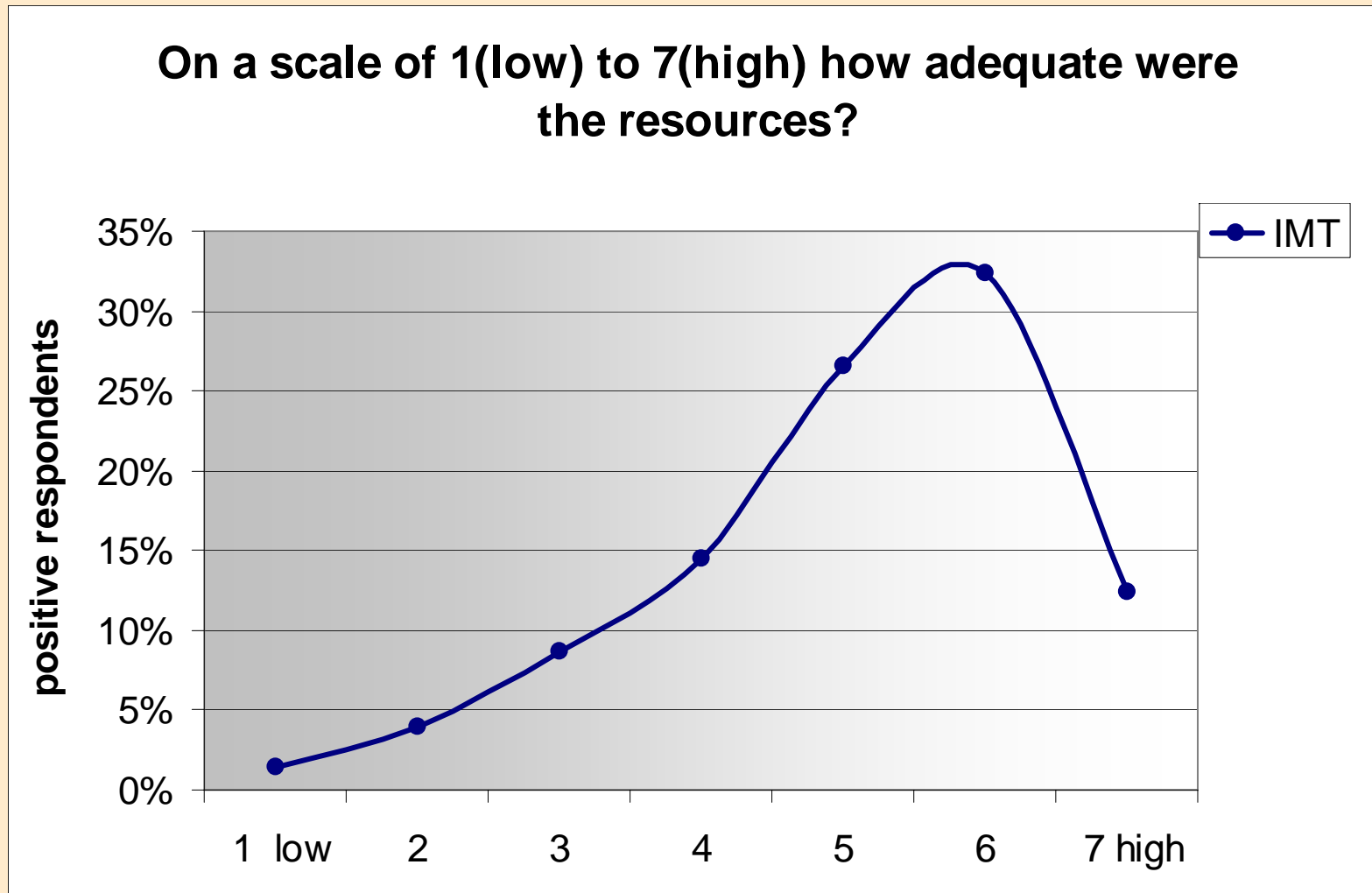


During the shift

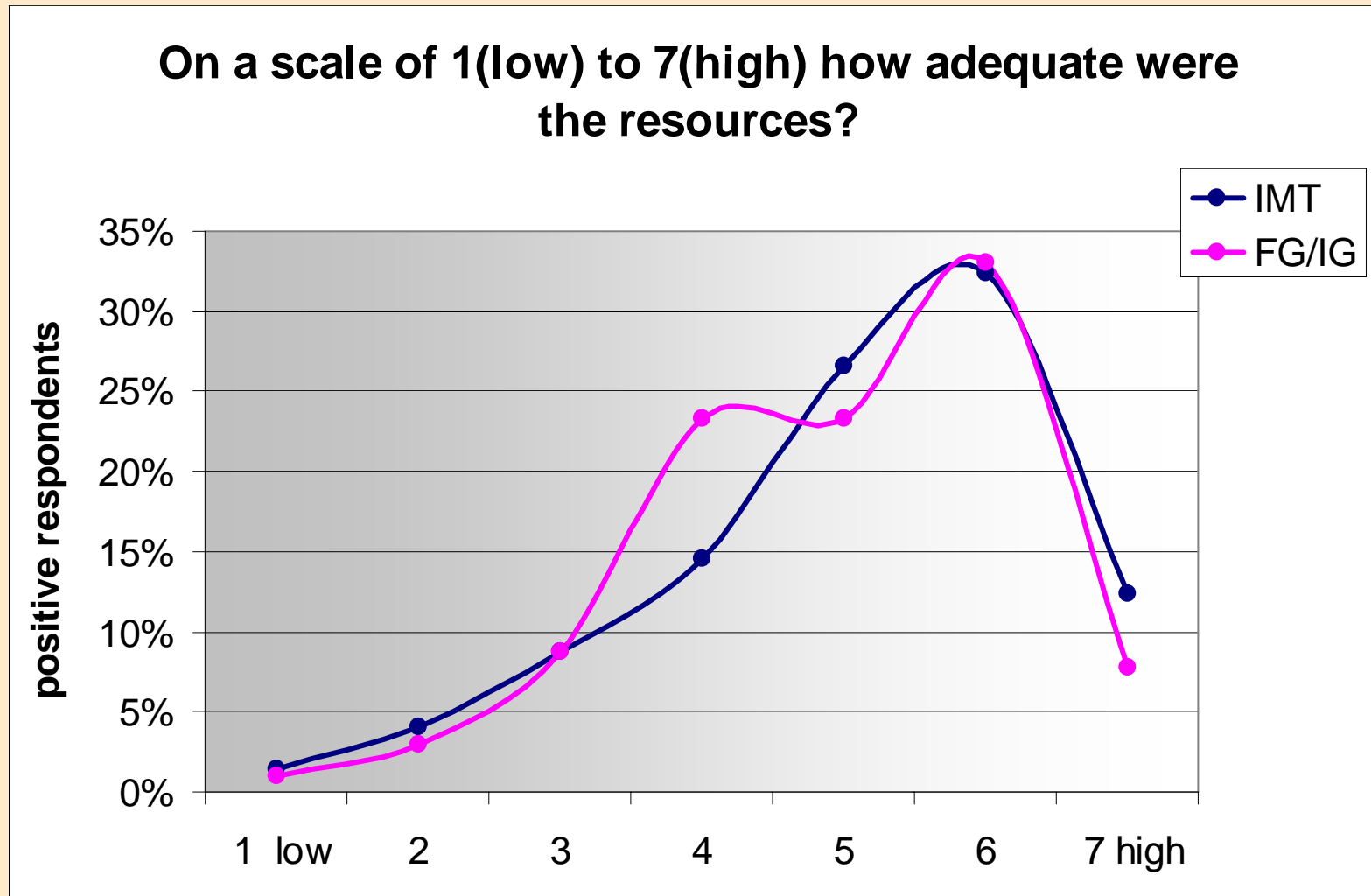


On a scale of 1(low) to 7(high) how adequate were the resources?

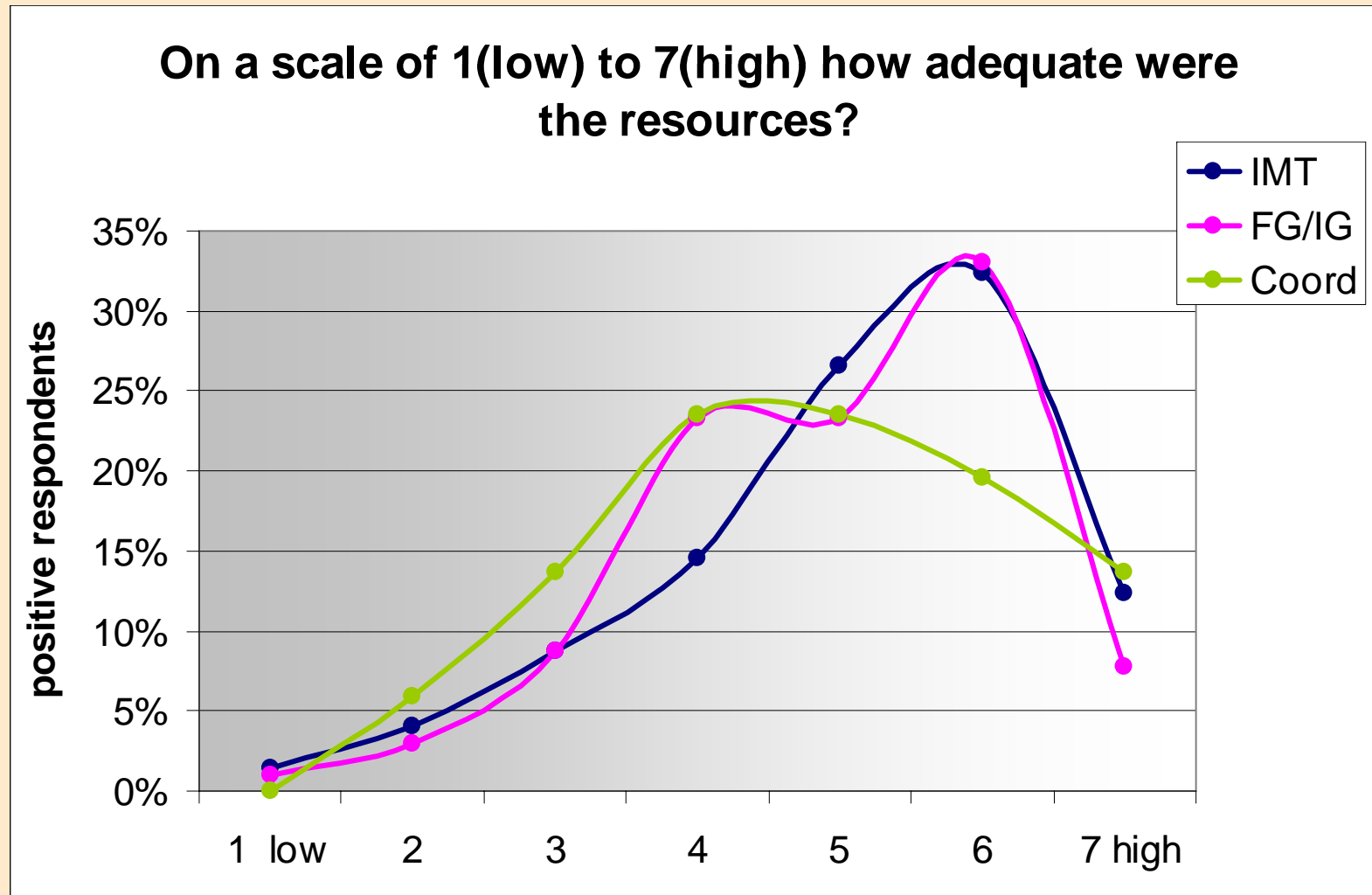
During the shift



During the shift



During the shift



During the shift



*people and equipment

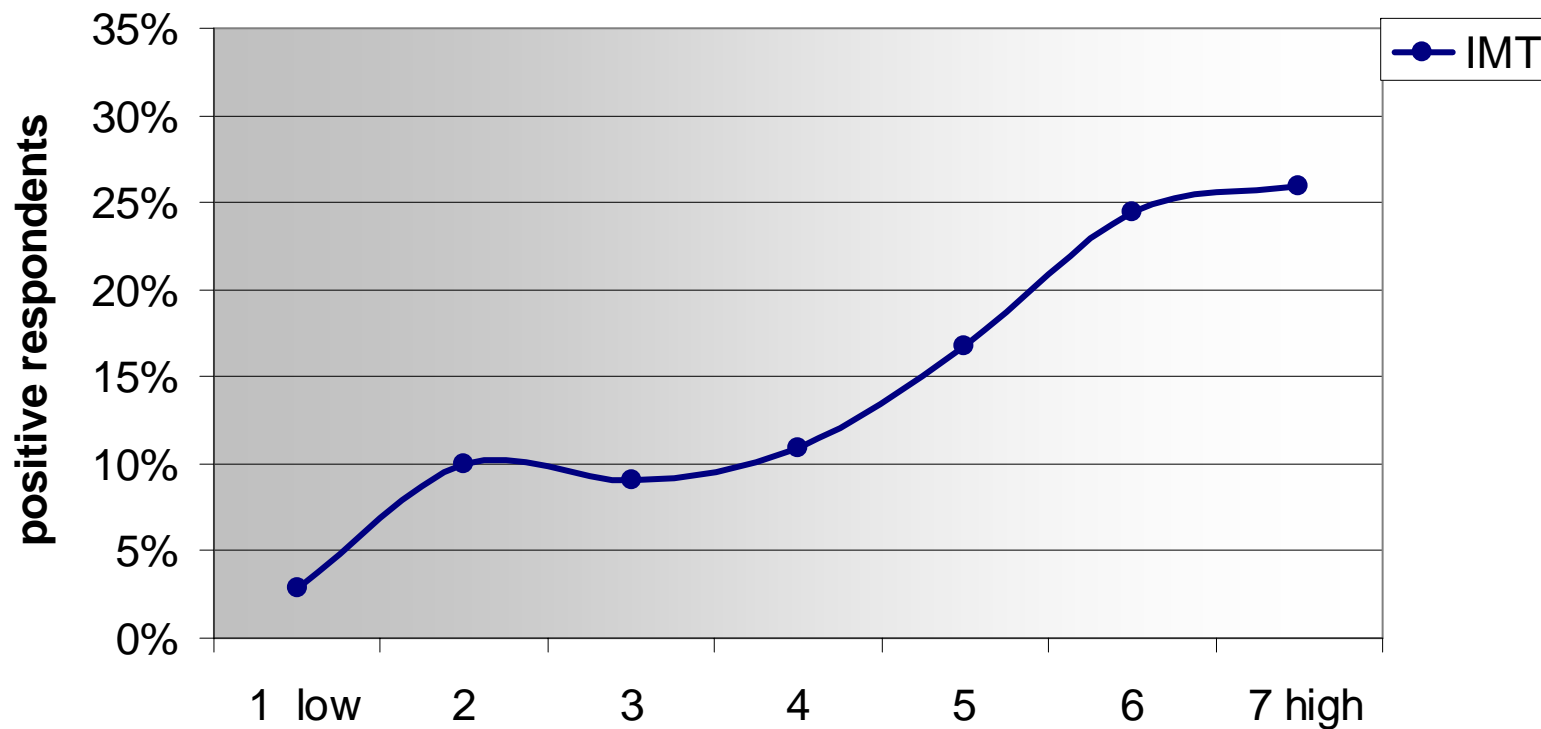
On a scale of 1(low) to 7(high) how confident are you that all resources* were accounted for in the resource management system for this incident?

During the shift



*people and equipment

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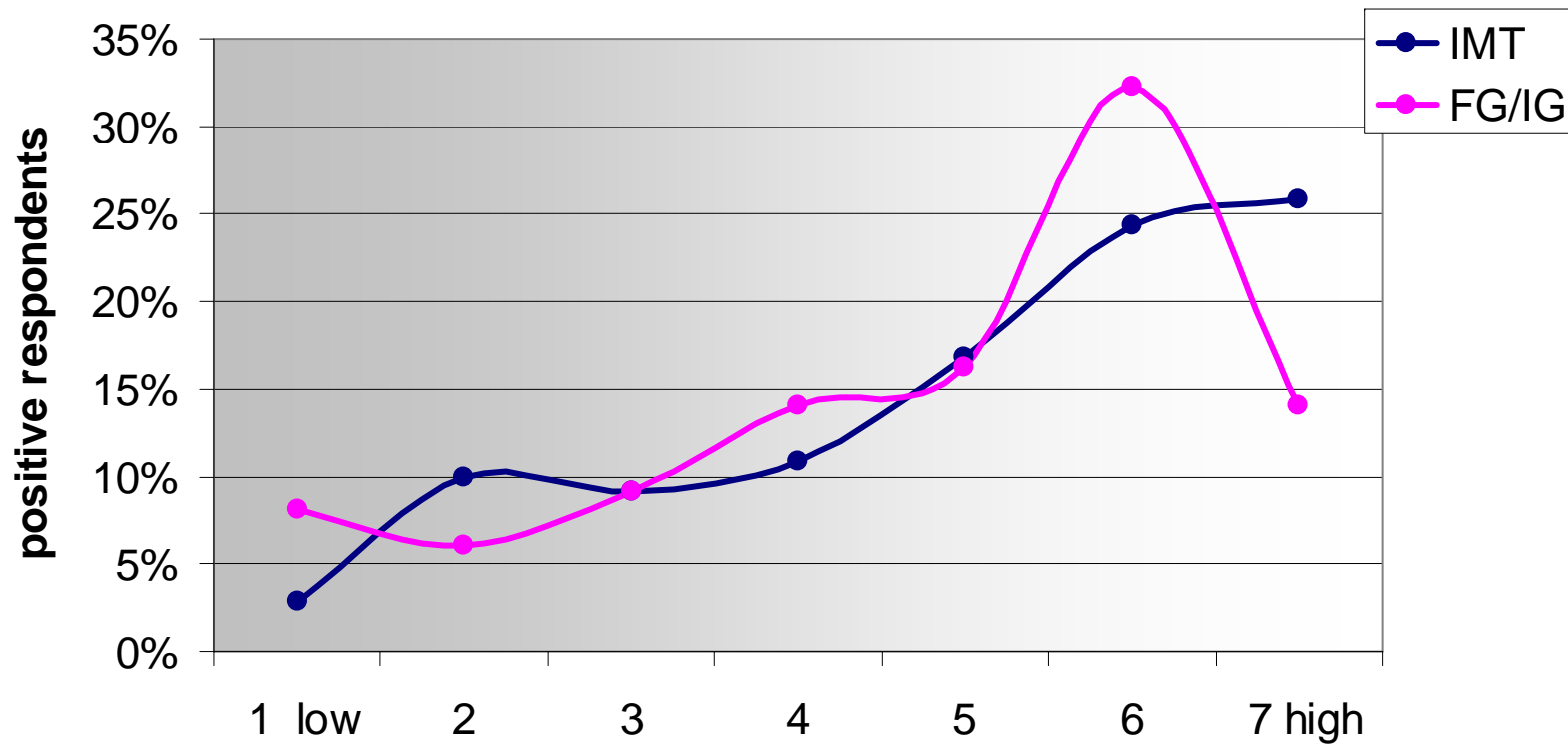


During the shift



*people and equipment

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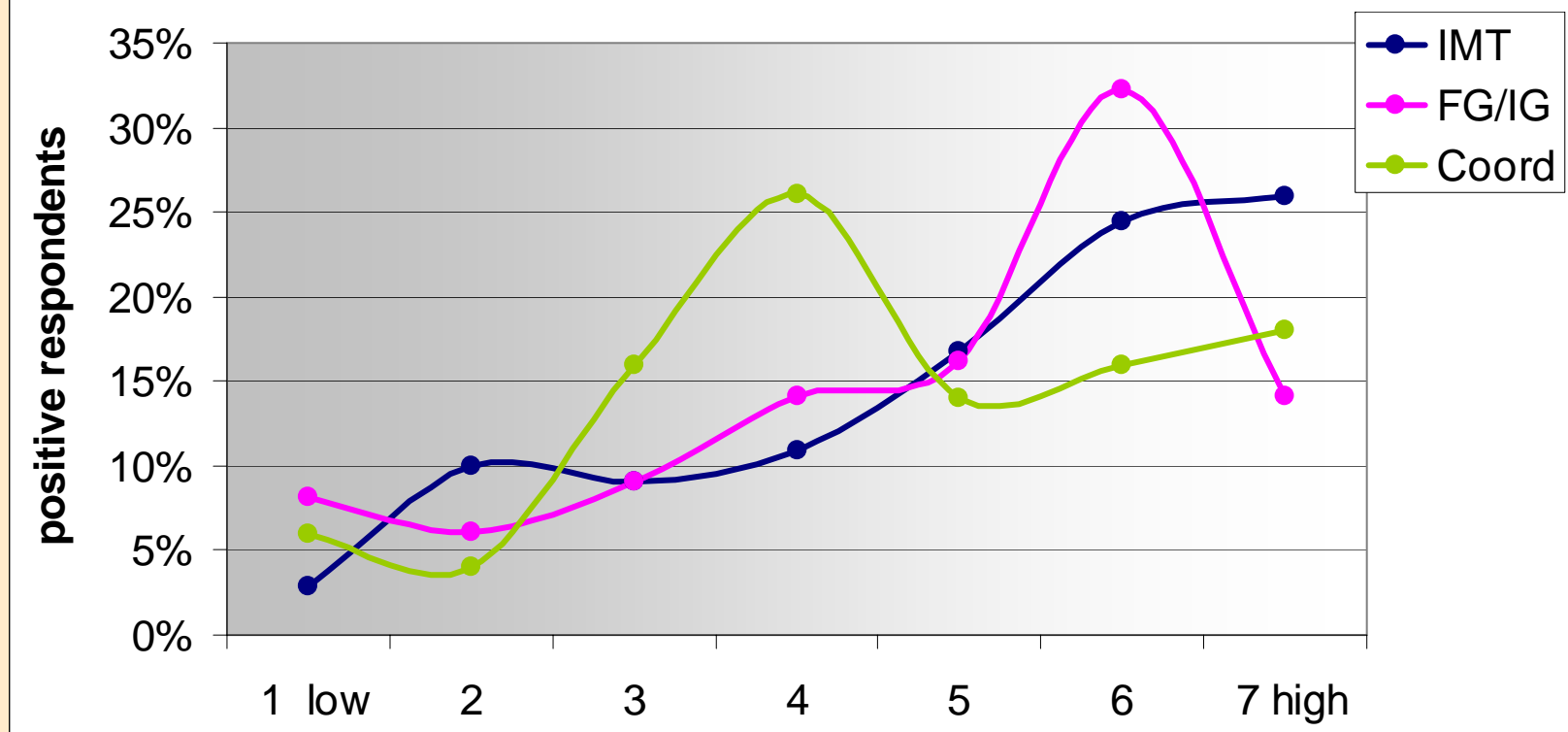


During the shift



*people and equipment

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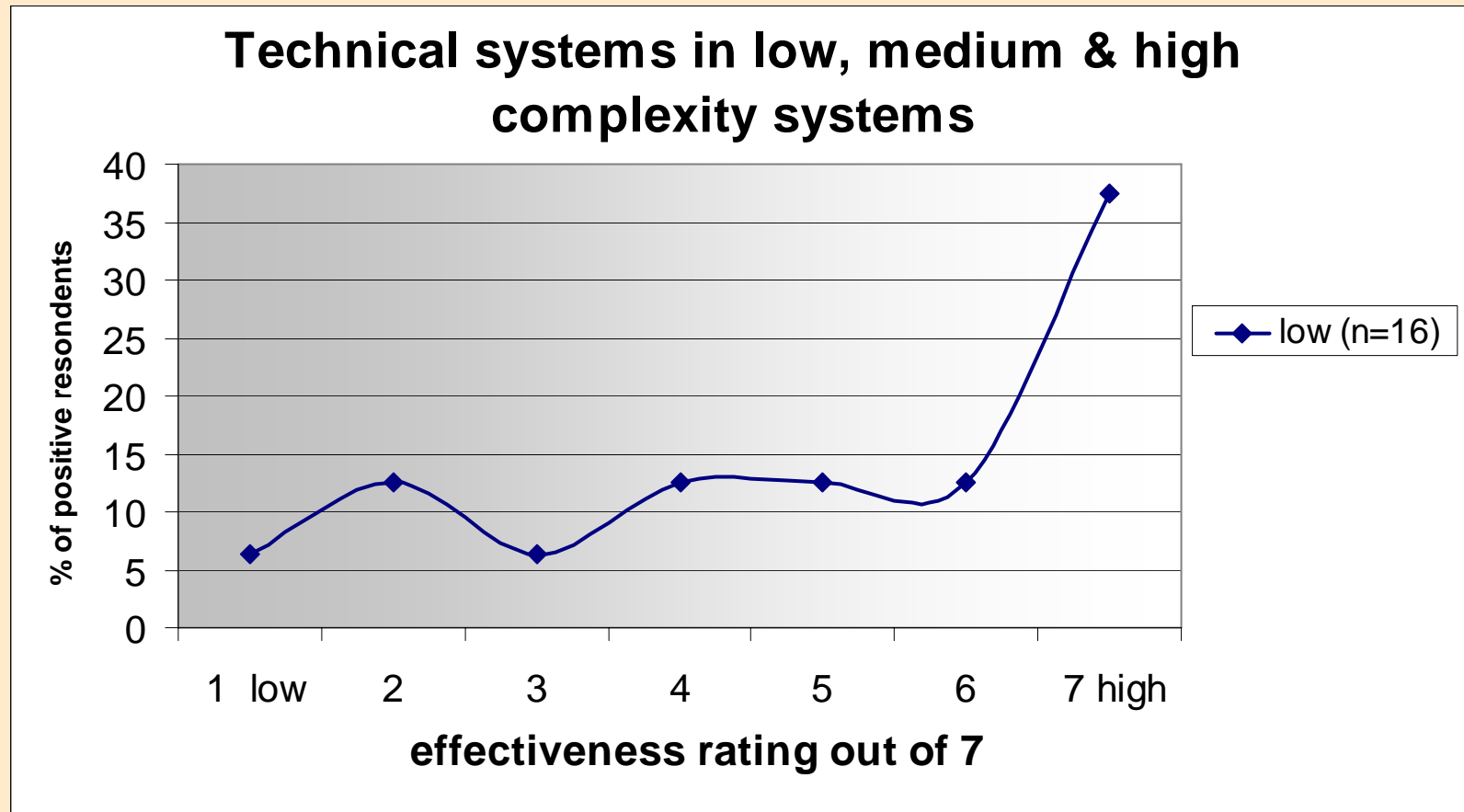




On a scale of 1(low) to 7(high), how would you rate the following in relation to the effectiveness of interoperability of agencies?

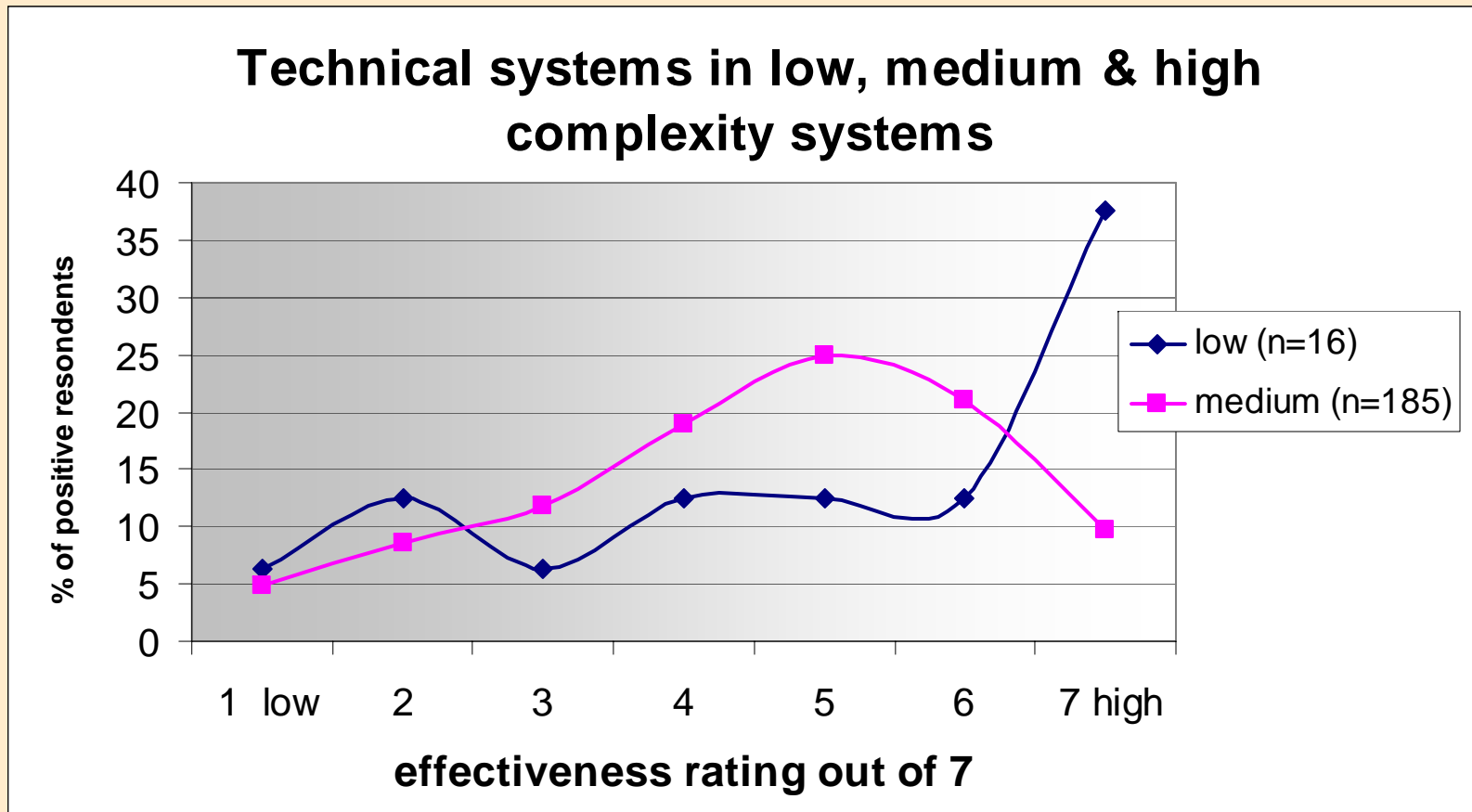


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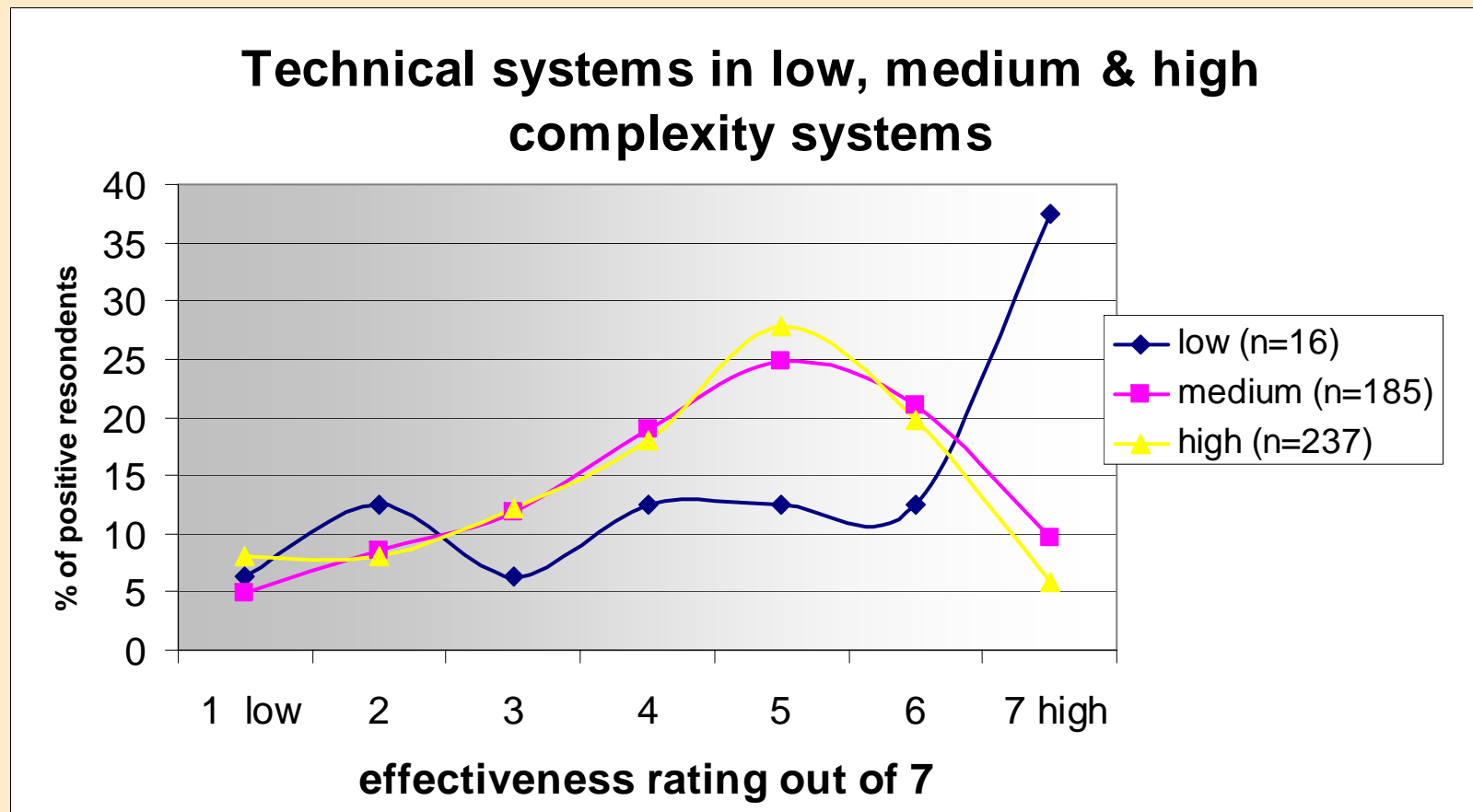


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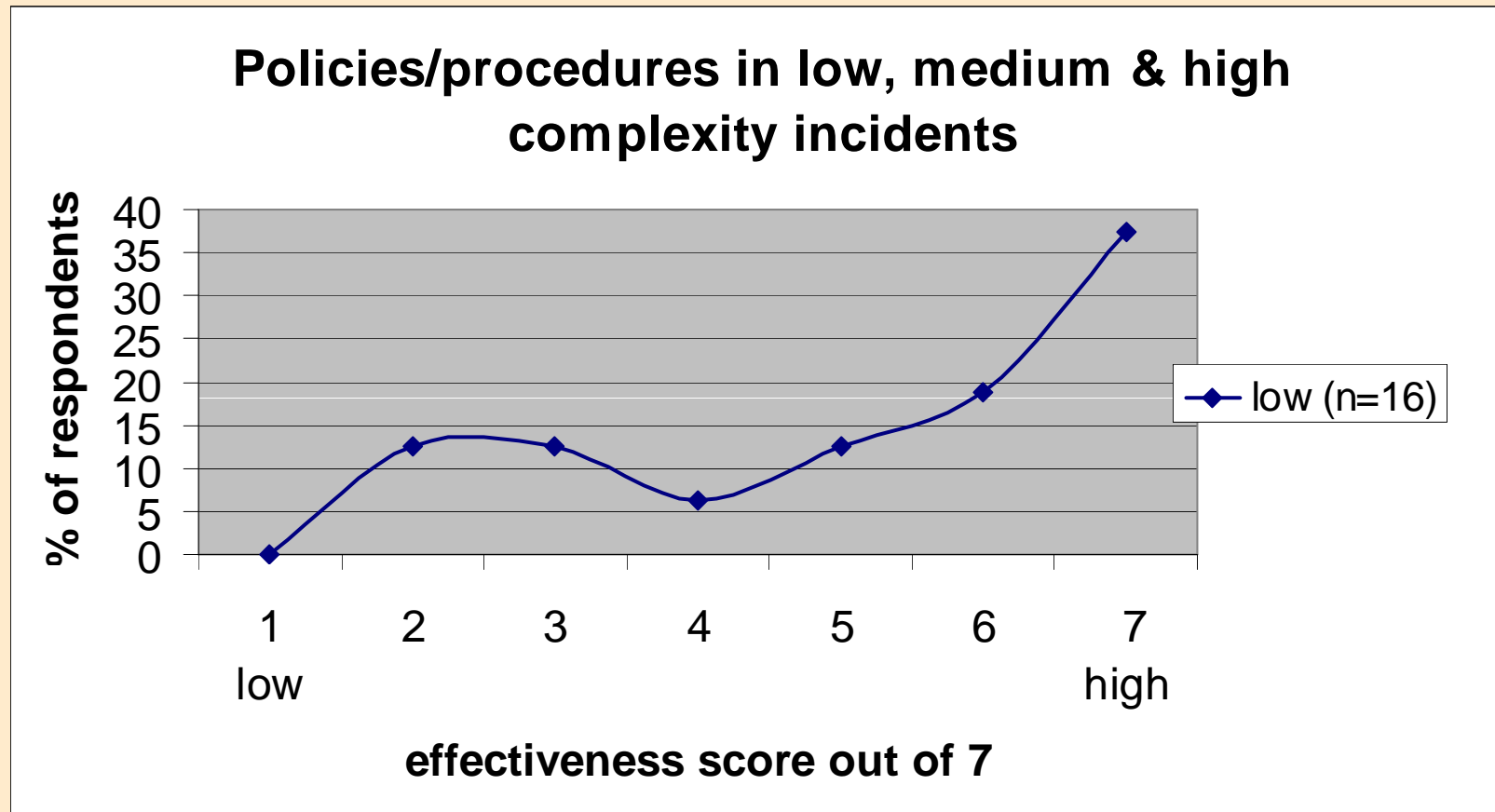




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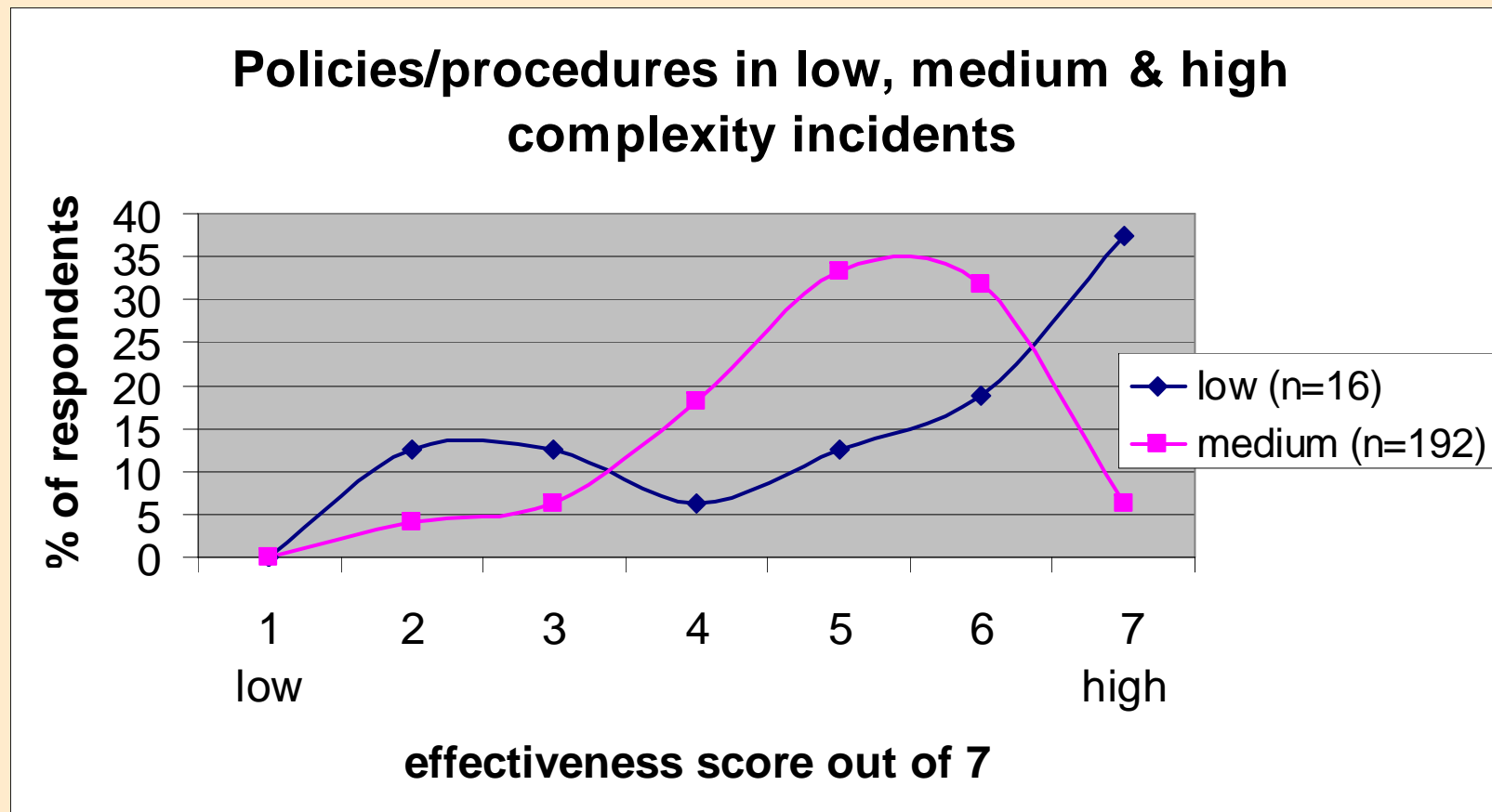


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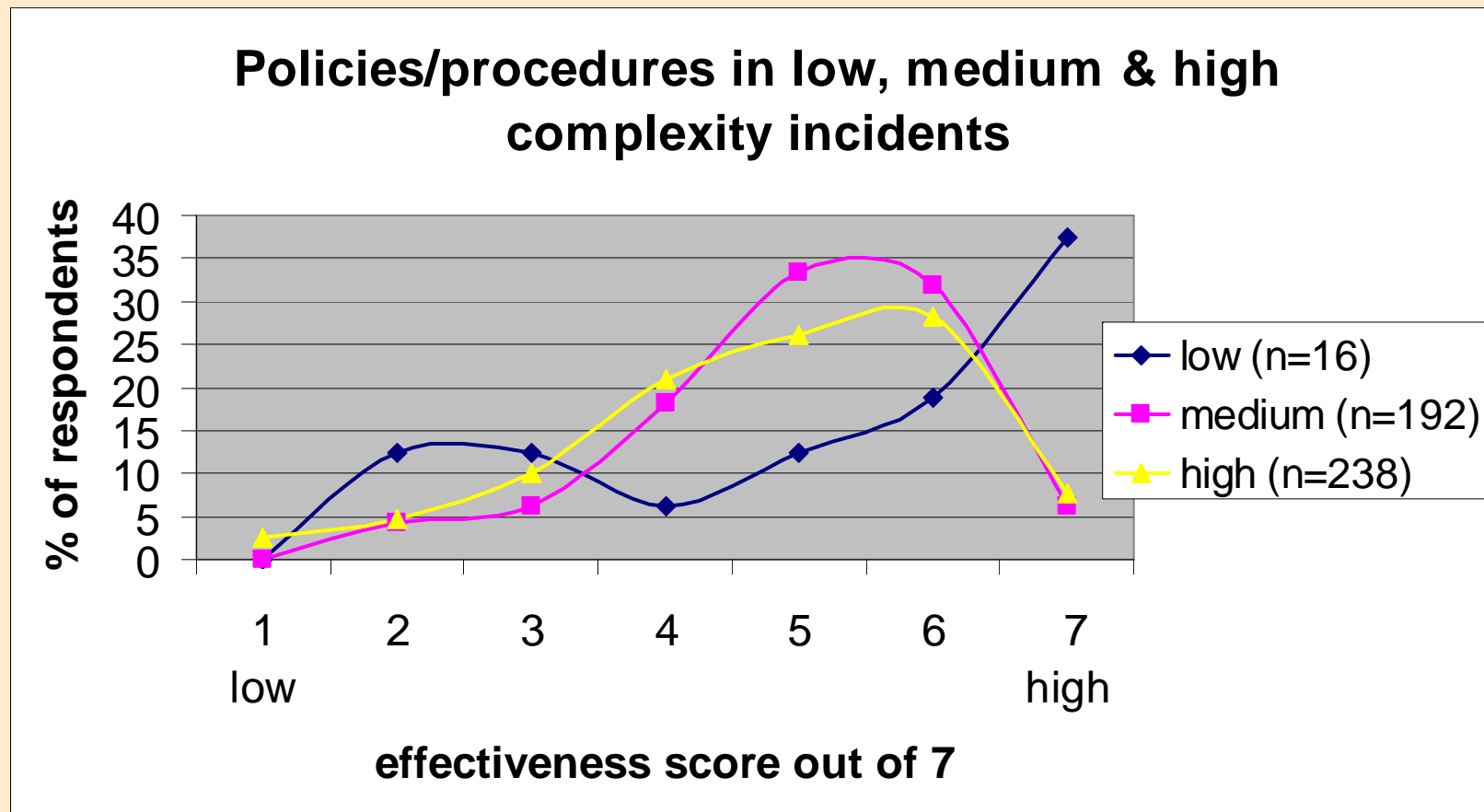


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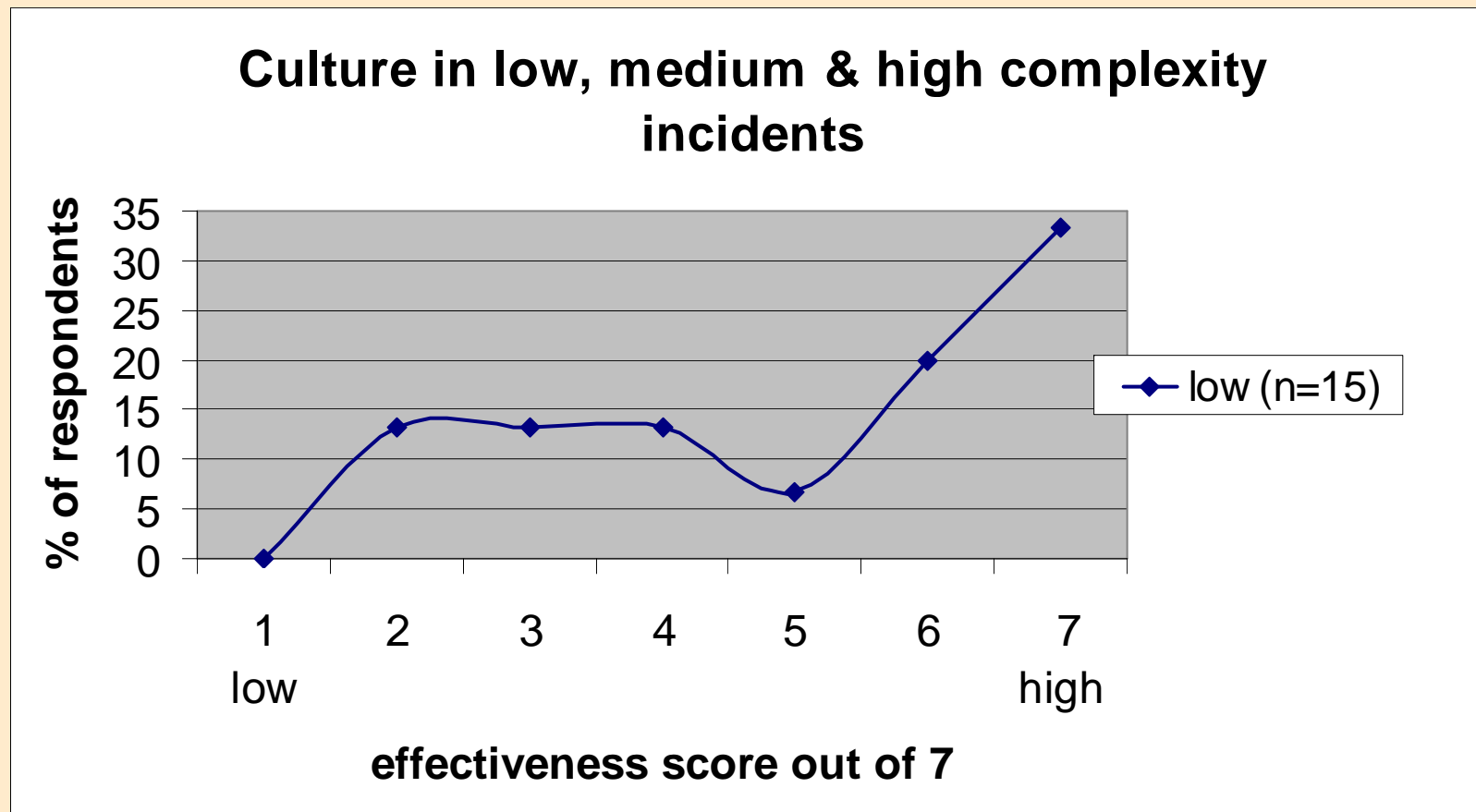




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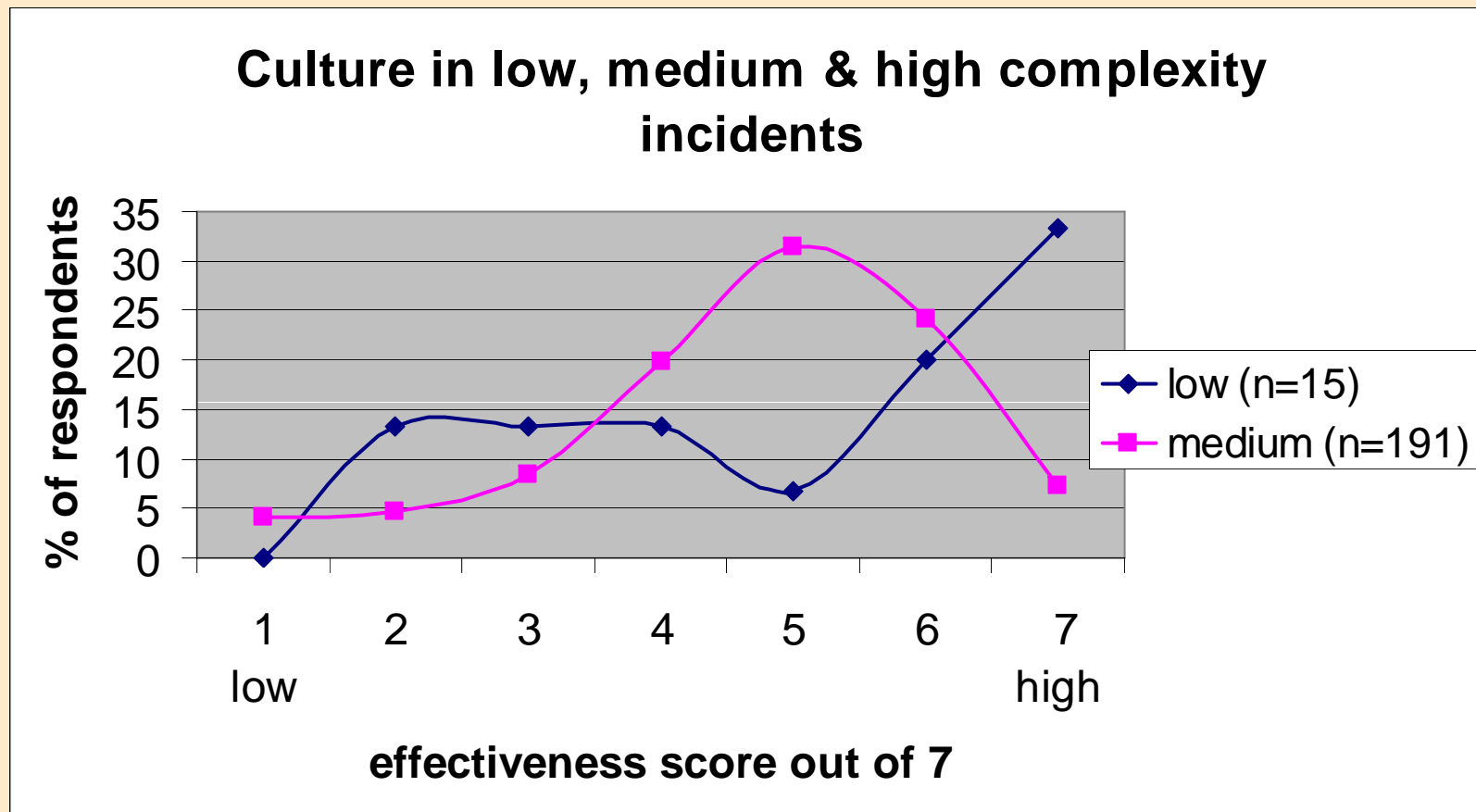


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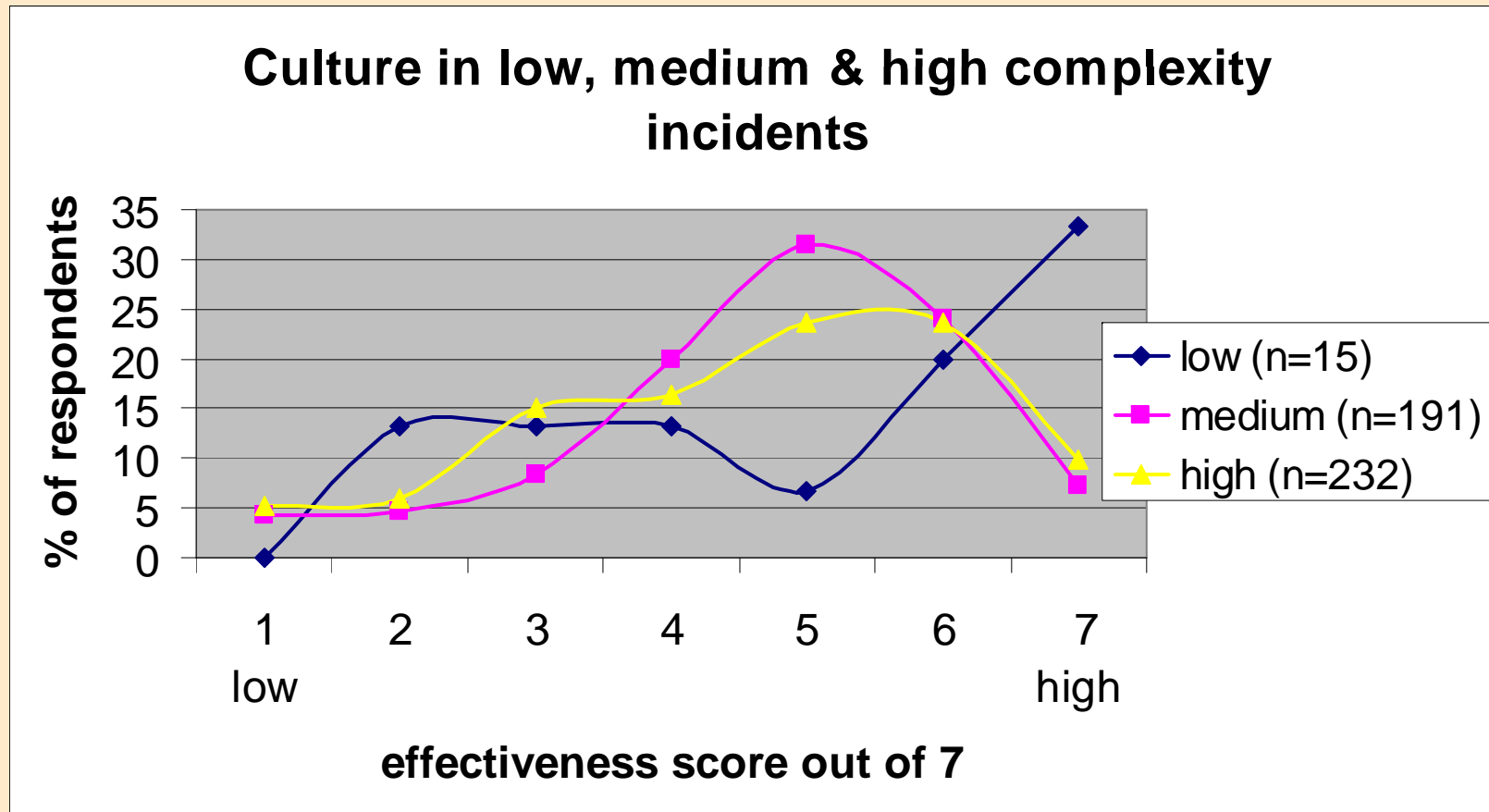


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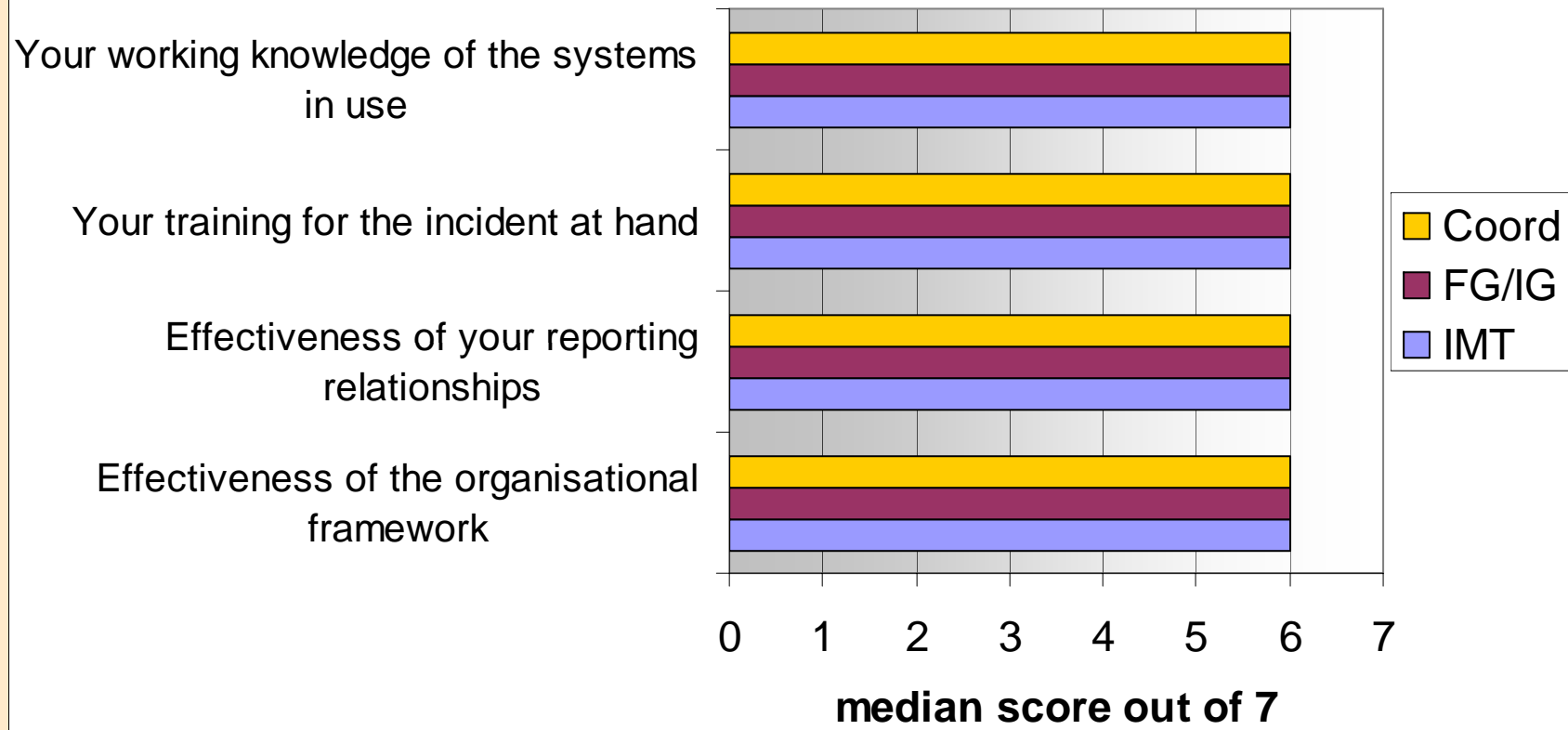
On a scale of 1 (low) to 7 (high), how would you rate the following in relation to the effectiveness of interoperability of agencies?





Areas of organising

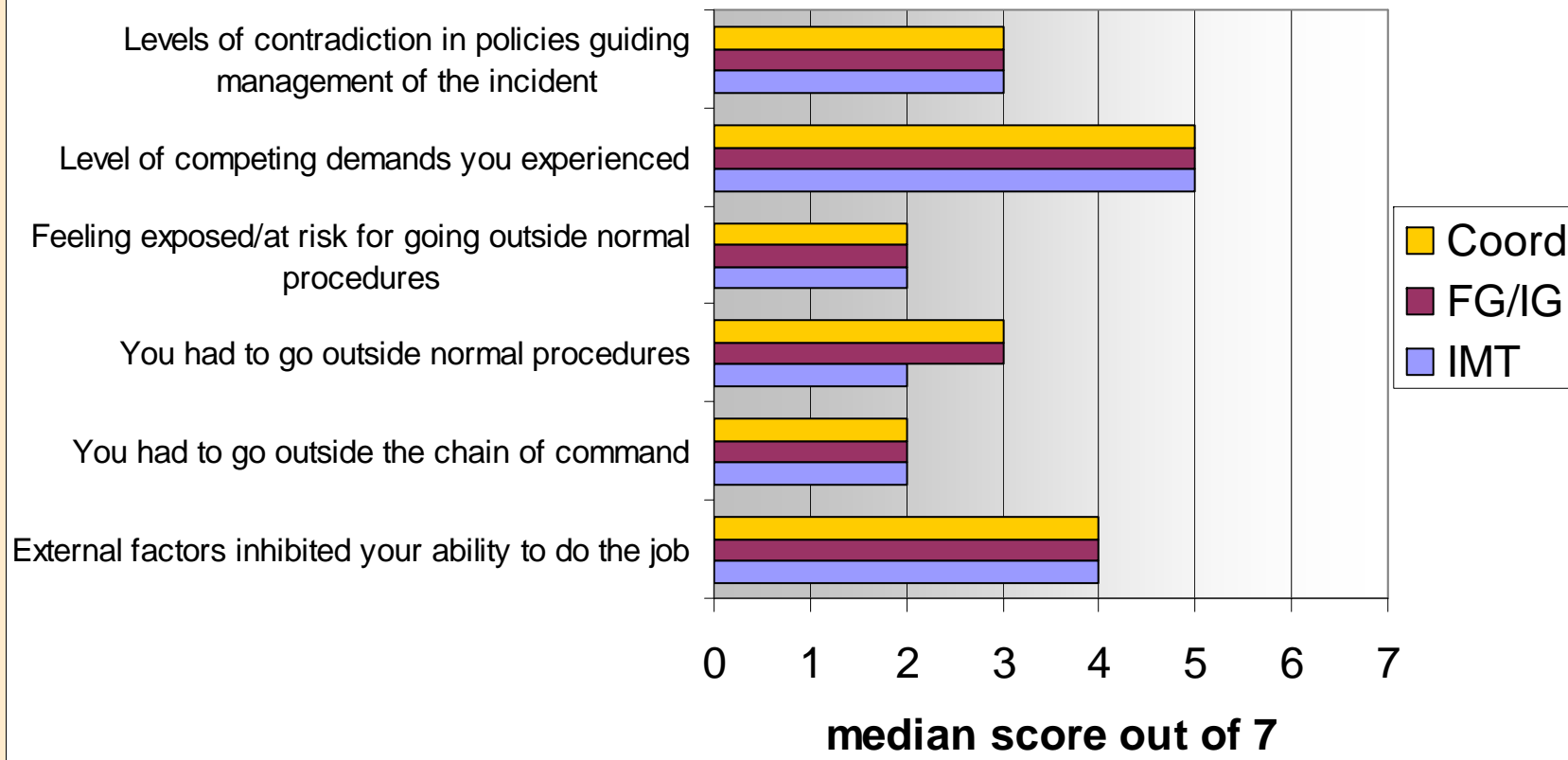
Statements rated from 1 to 7 (low to high)





Areas of systemic concern

Statements rated from 1 to 7 (low to high)





Issues for further discussion

- What are the barriers that inhibit specific cohorts of people (e.g., women, volunteers; younger recruits) from fully contributing?
- How can we capture experiential lessons learned from senior personnel before it's too late?
- What are the barriers to effective coordination between layers in the ICS? What improvements (organisational and technological) can be made?
- What is the nature of the competing demands and policy contradictions experienced by some personnel?

Issues for further discussion



- What are the strengths and weaknesses in communication and coordination between layers in ICS? Are there better processes that could be used?
- To what extent are existing ways of organizing appropriate under conditions of escalation? Does the existing system need refinement or transformation?
- What is the most appropriate role for coordination at regional and state levels -how might these be developed?
- What new processes are needed between control agencies to enhance coordination and what is necessary between control agencies and others involved in emergency coordination and support?

And thank you!

By Christine
Owen

With the
assistance of
two fabulous
research
officers...

Kirsty
Vogel &
Debbie
Vogel

and

stats...

Phil

